Virginia Wildlife

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Virginia Wildlife

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MILLS E. GODWIN, JR., GOVERNOR

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COVER: BARN OWL, by Jack Jeffers, Lyndhurst

Editorial

THE PRICE OF CLEAN WATER

"We All Need Clean Water" is the theme of National Wildlife Week this year. The bears fishing for salmon on our back cover typify the dependence of most living things on clean water.

"We chose clean water as the focus for this year's observance," said G. Ray Arnett, National Wildlife Federation President, "because this is the pivotal year in our long struggle to clean up the nation's waterways. We have a July 1, 1977 deadline coming up for all industries that discharge into navigable waters to apply the best technology available to treatment of their wastes."

According to the U. S. Environmental Protection Agency (EPA), 91 percent of all major industrial dischargers will meet the 1977 standards. However, many municipalities will not.

Our water cleanup program, like many other environmental improvement efforts, is caught on the horns of a dilemma. Cuts in federal spending to reduce inflation and balance the budget have reduced the funding available to localities for sewage treatment plant construction. Cities struggling with tight budgets and shrinking tax revenues are reluctant to commit large sums to capital projects at this time. Industries plagued by declining sales and profits are likewise reluctant to divert large sums to waste treatment technology at this time. Bureaucrats are apprehensive about cracking down for fear of plant closures and further increases in unemployment. "Go slow" is the byword these days in enforcing environmental regulations. Many have even been relaxed to improve our energy situation and avoid further depressing the economy.

It is easy to be critical when watching the spreading disaster of recent oil spills in Virginia waters; but are we ready to pay higher prices for gas and oil, or even do with less, so that slower and more expensive but safer means of transportation may be employed? Are we ready for higher taxes so that adequate sewage treatment can be accomplished? Can we stand even higher electric rates so that solar and other nonpolluting sources may be tapped?

We have made a moral commitment to clean up our environment. We are going to have to tighten our belts even more in these troubled times and make a financial commitment if progress is to continue. Improvement in the economy may help, but clean water is going to cost each of us in the end. But it is worth it. —HLG

Letters

LOADED QUESTION

In the various counties of Virginia there is a move afoot to have the Boards of Supervisors enact a law prohibiting loaded guns from being transported in vehicles. I feel that a law of this kind is clearly an infringement of the Constitutional Rights of the people to keep and bear arms.

This legislation was introduced as needed for safety and killing of game (Illegally). I believe more accidents are caused loading and unloading guns than transporting them. You now have a law on the books prohibiting the firing of a firearm within 300 feet of a public road. If this law is enforceable, please tell me how a new law would help. It seems as if penalizing the majority for the actions of a minority is the style of today, but it certainly is not the American way.

Jack Snarr
Strasburg

I am afraid I will have to disagree with you on the necessity for carrying loaded guns in vehicles. About 7% of our hunting accidents result from this practice. It also encourages road hunting, a very serious problem in this State.

Most gun-vehicle accidents occur when someone is getting a LOADED gun in or out of a car, a necessary act if you're going to carry them loaded.

The present law regarding shooting from the road requires that the Game Warden see the man pull the trigger. The main reason people want to carry loaded guns is so they can stop the vehicle, jump out, and shoot something from the road, often on posted property. The Game Commission has no sympathy for this type of hunter since they are the leading cause of the animosity landowners feel toward all hunters. The law was drafted on a local option basis. Thus, hunters in each county have the opportunity to express their views to their local governing body.—Ed.

HEAD-ON

Investigating the source of a loud crash at the rear of my house, I was surprised to find two birds lying on my patio. One was a starling, apparently dead, and the other a merlin (as per page 31, Virginia Wildlife, Nov. 1976) which was still weakly opening and closing its beak. Apparently the hawk was in pursuit of the starling when both collided with the house.

Surprisingly as I watched, the starling moved after about 20 minutes and groggily got to its feet, stood around a few minutes, then took off. After a few minutes more the hawk likewise stood up, rotated a few times, and flew away. According to your article, this early November episode would put the hawk "out of season" for Virginia.

Robert E. Lee
Falls Church

Amazing! Two excedrin headaches no doubt.—Ed.

MAGAZINES LATE

The February issue of Virginia Wildlife *no doubt was late arriving at your house and this issue will probably also get there a bit behind schedule. Our printer, along with many other factories, relies on natural gas for part of their operation--- and were cut back so that there would be enough gas for home heating. We are sure that everyone will understand that this delay in production was necessary during this energy emergency. —Ed.*

Opening Day At Prince William

By M. ALLEN SAUNDERS

Park Headquarters is the best source of information on fishing in the Forest Park the park staff is eager to assist all park visitors.

Snow flurries might not be the usual herald for opening day of the Virginia trout season, but as my wife and I drove toward Prince William Forest Park's Oak Ridge Camping Area, there was no mistaking the white stuff hitting the windshield of the car. Prince William Park, located just west of Interstate 95 and a mere 45 minutes south of the heart of Arlington, seemed the logical place to inaugurate the new season, both through its nearness to home at a time of gasoline shortage, and because of the consistent luck that we had enjoyed there on previous fishing trips. In fact, I can't recall a single trip of the summer when the lake failed to yield a stringer of scrappy bream and an occasional fierce pike (chain pickerel) from the shallows.

By the time we pitched the tent and assembled a store of wood for the evening's fire, the sky had all but cleared. With any lingering fears of a spring blizzard thus dispelled, we shouldered packs, picked up gear, and began the half-hour hike to the feeder stream that runs into the lake. I was looking forward to trying out the streamside strategy that I had worked out in an attempt to thwart opening day crowds. To do this, we had decided to fish above the lake on a stream much less accessible by road than the water below the dam, and in addition, I was packing in a rubber raft which would provide more complete access to the lake itself. Previous visits had shown that although the banks of the lake might be crowded with anglers, the lack of boats had limited fishing to the shore itself, with the center and deepest areas remaining untouched.

As we walked along the path, we were struck by the wintery appearance of the woods, with only an occasional group of wildflowers or hint of green on the smaller vegetation to indicate that, at least by the calendar, spring was over two weeks with us.

We arrived at the stream with no other fishermen in sight, and with only fifteen minutes to wait until the season's official opening at noon. After a quick lunch, it was time to break out the tackle. I decided to start with a No. 0 white roostertail spinner, a small lure which had proven ideal for relatively small, brushy streams like this one.

A glance at my watch showed that it was twelve noon and that the season was underway. Working downstream, I fished the first several hundred yards without any action. Before I could start thinking that someone had sneaked in and taken all the trout by anticipating the season several days, my luck changed. Standing on a fallen tree which bridged the stream, I cast into a deep hole where the stream had undercut the bank. Almost before I could begin my retrieve, I saw a flash of silver dart through the water, and, a split second later, felt a sharp pull on my line. As I cautiously reeled him in, ole Br'er Trout did his part by performing those leaps and taildances across the surface of the water which have thrilled countless

rk. It is located near Interstate 95 and State Route 619. Call 703-221-7181,

fishermen through the years. Finally, as he was drawn near the bank, I jumped down and carefully netted number one of the season.

As we made our way downstream, I managed to hook another leaping rainbow at the tail of some rapids overhung by dense brush. By this time we had begun to see a few other anglers. Most of them seemed to be enjoying a fair measure of success with such traditional baits as salmon eggs and corn. There were also several youngsters whose first reaction at landing a trout was surprise and then utter delight, both of which were shared at least in equal measure by proud fathers.

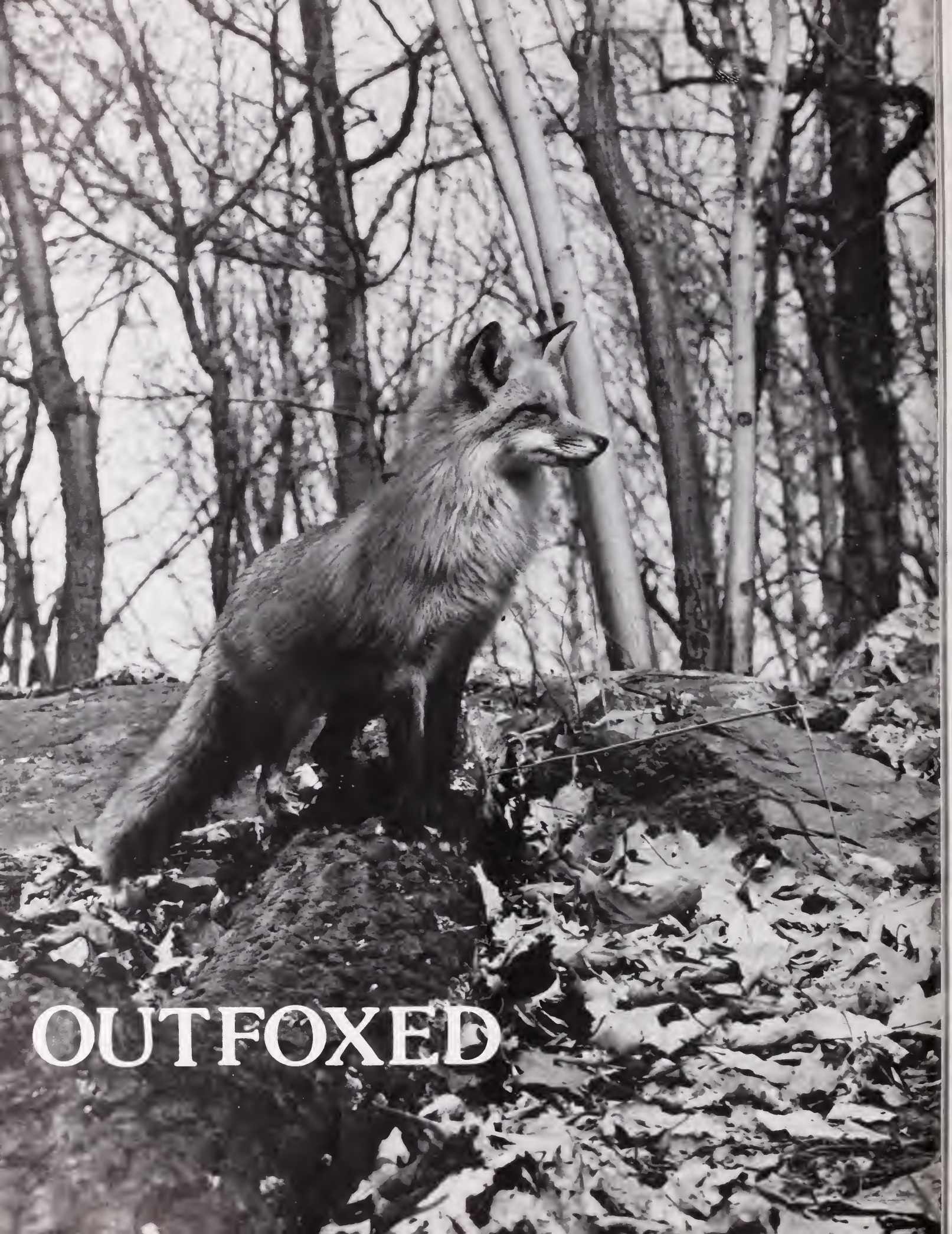
We had now reached the point where a dirt service road crossed the stream, and the numbers of folks streamside resembled what one has come to expect on opening day. Now was the time to begin the second part of our plans. Walking below the final set of rapids, I unpacked and inflated the rubber raft which I had lashed to a packframe. Paddling into the middle of the lake, I was a bit surprised to see numerous signs of fish rising about 50 feet off one of the lake's further shores. After beaching the raft, I changed my lure to a No. 3 Mepps spinner and began fishing. I hadn't long to wait before I knew I had hit paydirt. There was a powerful tug on the rod, which bent sharply as the line began pulling against the drag. Attempting only to keep tension on the line, I let this still unknown lunker have his run. After a very long two or three minutes, I began to make headway in reeling him in. Finally I caught a first glimpse of a bass such as I knew had to exist in this lake, but which I had previously been unable to hook into. After one final run which did absolutely nothing for the nerves, I was able to beach this catch and put him on the stringer. The trout, which were so much fun to catch in their own right, were dwarfed when placed beside this seventeen-inch largemouth. After trying unsuccessfully to locate this fish's companions which might be lurking in the vicinity, I deflated the raft, and we began our hike back to camp.

The time was about 5:00, and to our surprise, not a person was to be seen on the stream, even at those spots which had been so crowded just several hours before. I was even more surprised to find that the trout remaining in these pools had apparently recovered from their initial spooking to a sufficient degree as to react in the approved fashion to my casts, and within about an hour and a half I was able to complete my limit. On cleaning the trout it was interesting to find that several of them had been feeding off crawfish and what appeared to be a type of greenish-brown nymph.

As we hiked along the path, my wife observed that this year, in comparison with some seasons of the past, the fishermen and others enjoying the stream had done an admirable job in carrying out their trash. Only a few grains of Niblets or an occasional cigarette pack bore witness to the numbers of people who had been there that afternoon. The sight of four deer crossing the path by the stream and strolling leisurely into their bedding areas was a pleasant finale to our hike back to camp.

That evening in camp, the bass provided excellent fare for dinner, and the trout made for the finest of all breakfasts the next morning. On this note, fellow anglers will recognize our delight in being able to carry home cans of beef stew to use on another trip when fisherman's luck might not turn out quite so well.

Most people who regularly fish the lake and streams of Prince William Park generally agree that it is a regular producer of good catches, but for my money this mixed bag of trout and good-sized bass was an exceptional pleasure. It's no wonder that the park is such a popular fishing spot for Old Dominion anglers from Arlington to Fredericksburg.


OUTFOXED

By SHARON SAARI

"Sly as a fox," where did that phrase come from? Is he really that smart? YES. If not, this English introduction, the red fox *(Vulpes vulpes)* would not have survived this long, nor spread from one end of the Country to the other.

Not long after the British founded the colonies of the Old Dominion, they brought their horses. But the native gray fox *(Urocyon cineroargenteus)* did not provide the sport that Reynard the Red did, back in Merrie old Englande.

Gray inhabit forests, and not the open country created by the early colonists. Large tobacco plantations were the early Virginia land-use pattern. These openings reduced the gray's habitat, and expanded homegrounds for the red. The hunted gray runs in small circles within his wooded territory. If pressed hard, he will climb a tree to frustrate the hounds and the hunter. For this reason, the red was imported.

The red fox prefers the open countryside, seeking refuge on wooded "edges," just passing through the gray's habitat. So his success is not competitive with the gray. Unlike other "exotic" introductions, this species did not displace a native population, causing ecological imbalance. As agriculture grew in the Commonwealth, the food of the red fox increased; mice and rabbits were plentiful.

Scientists and game managers have studied the movements of foxes for years, using primitive snow tracking to highly technical radio tracking with transmitter collars. Foxes have been live-trapped, marked, and released for data gathering. The retrapped and captured foxes provide interesting information.

Least known to the researching biologist is what every hunter knows. . . the escape pattern of the fox. Major studies have been done in Georgia and South Carolina on the escape behavior of the deer, when chased by hounds. They zigzag. They hide in brush cover, remaining still. They circle within known territory, or bolt straight away, when desperate. But ask any foxhunter, and you get a combination of escapes by the wily fox. The fox differs from the deer in using his brain to escape. Many actually believe that the fox enjoys outwitting the hounds and man.

The fox uses escape patterns similar to the deer to avoid hounds. However, foxes must depend on their skills and knowledge of the territory, rather than speed. In an open run, where the fox is in full view, the call "tally ho" sounds the death knell for the wild canine. The natural lay of the land, ridges, fences, woods, and streams actually determine the escape route. Hunters who have hunted the same country for 20 years can predict the fox movements. It may be a new generation of foxes, but the pattern is basically the same, within a known territory. The fox may run in and out of the territory, but he will almost always return to his known home ground. . . unless scared.

In a normal hunting situation, the fox follows a planned escape route, often stopping to watch the confused hounds with amusement. In the beginning of a hunt, the fox may choose to stay in his "kennels," under a ledge or in a brush pile. When hounds move directly toward him, he will get up and away. Occasionally, a "sleeping" fox is caught. According to one professional huntsman, "then, he uses everything in his territory to mess up my hounds and escape. The fox himself is a hunter, so when hunted, he knows what to do." From his own experience of tracking down his prey, the fox knows where the scent is good or bad. He knows rock outcrops and stone walls don't carry the scent nor do they make noise. A wall is also a faster, easier path. Mrs. A. C. Randolph, Master of the Piedmont Fox Hounds, remembers a fox who used the wall around a cemetary, one snowy day, to elude the hounds. Foxes are also known to rest on the rock outcrops, so as to not leave behind any odor.

Foxes use other tricks to confuse the keen noses of the foxhounds. I have seen a red running immediately behind a Virginia white-tailed deer. The deer jumped over a fence, and the fox continued along the fenceline. Minutes later the hounds reached this split, and followed the deer. Another time, while hilltopping, I observed the fox weaving his way in and out of cows and calves, before dashing off in front of his pursuers, his scent totally masked by the cattle. The use of cattle and deer is common, and often confuses the hounds, at least temporarily. I have heard of foxes riding the backs of sheep, but have yet to find a reliable source for this!

One example of a smart fox was reported to me by a well-seasoned huntsman. This particular fox was "bobtailed" and therefore identifiable as an individual. Most are not. The bobtail had provided good sport for most of the season, and had been hunted by several packs in the area. One day, he was closely pursued by a very large pack of hounds. The hillside was ridged by many parallel cow paths. The hounds were closing in, and spread up and down the slope. The bobtail ran along one upper path, then dropped to the one below it. Each time he dropped to another lower path, he left behind a few hounds, who had to double back to relocate the scent. Though this maneuver gained him a few extra feet each time, the hounds did eventually capture their prey. Another clever red regularly used a hog pen with a very narrow gate exit. He fooled several hunts with this tricky place. Finally a hunter asked the farmer about this fox. "Sure," answered the farmer, "I know this fox well, and he knows my hog pen, because once in a while he gets a piglet, and escapes me through this same gate."

It is the intelligence of the red fox that intrigues and infuriates man and keeps him in hot pursuit. A fox who knows his country is rarely caught. Actually, a top Virginia hunt in the Piedmont region, reports that they kill under 1 percent of their chased foxes. Some hunts,

when wanting to assure a fox for sport, will "drop" a fox the night before. This fox will be out of his territory and will run straight away, becoming easy prey.

A fox spends most of his life in his home range, and this particular area has all his living requirements. The size of this home range depends on the habitat. In a very diverse area, "rich country" for the fox, the home range will be smaller, only 150 to 400 acres. In harsh land, or during a long cold winter, the fox will expand his home range to meet his needs. Any movement over five miles is considered to be a "dispersal" by scientists, or a movement away from home. A fox can easily cover five miles within his home, hunting for food, or running from hounds.

The average size of the home range varies, depending on food availability, cover, and competition. Grays may live in groups, but the red is more solitary. In Michigan the average size of the red fox home range is reported to be 1.4 square miles, or 900 acres. Iowa foxes are reported to have a similar one mile radius. Illinois foxes average 955 acres. But in Wisconsin, the foxes of a very monotonous territory needed up to two square miles. It can be assumed that Virginia foxes can get along with less than 1000 acres.

Studies show that the shapes of home ranges tend to be linear, and are associated with certain habitat features. To determine the shape and use of the home range, foxes were fitted with radio collars and released for study. Within the regular home range, there were certain high use areas, termed "biological centers" of activity. A fox may have several of these activity nodes within his home range centered around the den and the best hunting areas, not necessarily the geographical center of the range. Here are the best coverts where a huntsman will cast his hounds.

In the early fall, young cubs begin the fall dispersal. In late September and early October, the cubs leave the home den and set out on their own. Throughout the late summer they have been learning to hunt food, avoid enemies, and the general A.B.C.'s of foxhood from the adults. The "cubbing" season, too, opens in September and October. At this time, the young hounds are learning to hunt, while the cubs learn to be hunted. . . more important, to escape. This goes on during the fall shuffle, when young foxes leave home.

A typical fox habitat has enough resources to support a certain density of foxes. . . i.e. one fox per 1000 acres. There is enough food and cover for one fox here. Nature continually overproduces all species' young; some will never make it. Some young replace last year's losers, foxes lost to automobiles, disease, hunters, trappers, starvation. Some young are lucky enough to just move next door; others must travel many miles to find a new home. Sometimes the young females may occupy the same territory as their mothers for a season, but then they eventually disperse also. The land has a particular carrying capacity for foxes. Biologists find that the young male actually travels further in the search for a new home range. Michigan studies show that the young males move up to 166 miles compared to the females' 38 miles. Other studies showed that young captive foxes dispersed an average of 10 miles. Adopted young moved up to 20 miles, on the average, when they left the "home" den. In Iowa, after release of 367 foxes, the average male moved 18 miles, and the average young vixen only averaged 6 miles. Others went over 100 miles, at a phenomenal pace of 11 miles a day. Why do males move more than their sisters?

A juvenile male becomes a "dog fox" or reaches sexual maturity earlier than vixens. Hormone levels change, perhaps even causing this fall restlessness. Males are more competitive than females. The territorial male fights other dog foxes in his home range.

During the mating season in mid-winter, which travels, the dog or the vixen? Most foxhunters state readily. . . the dog fox. But, huntsman Albert Poe, of the Piedmont Fox Hounds, has another theory, differing from Melvin Poe, Orange County huntsman. Albert Poe feels that the female strays from her home ground, in search of males, picking them up as she travels. His theory comes from observation; comparison to domestic dogs; snow tracking; and his long experience in the hunting field. As the vixen comes in season, she moves restlessly, expanding her territory temporarily. Dog foxes follow her, fighting each other along the way, with the victor finally breeding her. The "breeding territory" may be an acre in size. Then the vixen returns to her home and den. The male uses no den, but stays above ground year 'round. For this reason, more dog foxes are killed each year. The female may change dens, within her regular territory, as one becomes fouled. Poe describes the groundhog as "the fox's best friend. . . a housekeeper to provide new dens, as well as a mealticket."

Both the groundhog and man have helped the red fox to expand their population, and spread across the United States. Man the farmer certainly aided this population explosion by changing land use patterns from forest to agriculture. This gave the red the competitive advantage over the gray fox. Now, man the urban dweller may change the fox's pattern of movement again. As habitat is lost to cement, both species are displaced. Many foxhunts have been forced to move their kennels and open new hunt country away from expanding suburbia. This is not only true in Chicago and Atlanta, but in the urbanizing Northern Virginia region. Fairfax Hunt has been forced out of Fairfax into neighboring Loudoun County. Loudoun Hunt has lost many acres to subdivisions around Leesburg. The red fox will survive this trend, but will the sport of foxhunting?

Flight of the Falcons

By JEAN GARVIN KNIGHT

For several years my husband and I had occasionally seen a male sparrow hawk near our barns and backyard. He seemed to roost for a time in the large balsam tree near the house. Once, we found him in the pigeon loft in one of the barns, where he could not find his way out. We caught him without too much trouble and examined the little fellow with interest before freeing him.

Not much larger than a robin, we noted his crisp, neat markings and coloring, the small hooked bill. We observed his rusty red back, beautifully marked tail, and the striking black and white head markings. The steady gleam of his sharp eyes seemed to be taking measure of us in return, and as he was gently allowed to ease from our grasp, he flew swiftly up and away, with his characteristic KY-LEE cry we had heard from the top of the balsam tree.

It was a year later we had the pleasure of seeing the little hawk and his mate, smallest members of the falcon family, take up nesting in the gable of our barn, and within sight of our back door. Roger Tory Peterson prefers to call him by his other name, kestrel, and says the bird is the only member of the hawk family to build his nest in the holes of trees. Our kestrel chose a pigeon box with a large round hole which had been placed under the overhang of the gable point of the barn several years before.

Pigeons had reared their squab in this high box, when they were not beaten away by persistent starlings. We had seen no sign of any struggle over the nest when the kestrels moved in. In fact, they were well established and had large young, before we realized they were our new tenants. They were so stealthy in their habits and in feeding of the young, that the babies were nearly full grown and were peering out of the nest before we were certain a family was in progress. Our two pairs of binoculars were brought out in a hurry, and as the young hawks grew and became more curious and active, we spent many interesting moments watching them.

We had no idea how many birds were in the nest until flight time arrived. This was no hurried matter with the fledgelings. It took two days for all to leave the nest, and a total of four siblings followed an identical pattern; a flapping drop to the ground, then a hopping walk across a corner of the barn lot to a large Norway spruce. At the base of the tree, each bird would proceed to climb and flap his way up the perpendicular trunk, to the first limb.

Each gradually hopped from limb to limb, with frequent stops and cries to inform the parents of his location and appetite. There was much answering and commotion from the parent birds. Late on the second day the four young had arrived at a conspicuous point on a high limb of the spruce — four downy baby faces in a row, each one almost as large as the mature birds.

All this activity in the kestrel family had not gone unnoticed by the other birds who had apparently not noted their earlier presence in the box. The loud and vehement attacks were led by a pair of kingbirds with their persistent screaming and diving as though trying to unseat the little falcons from their perch. After

especially close dives the little fellows clung tighter, and squinched their fuzzy faces down low for the expected attack. Mockingbirds and blue jays backed up the kingbirds, all obviously recognizing the predatory specie regardless of age or size. These tactics were kept up for several days, and sometimes the young sparrow hawks were forced to move in close to the tree trunk for the protection of the spruce limbs above.

As the youngsters grew used to their environment and began practice flights, they would circle out a short distance and return to the shelter of the tree. Their circles grew wider as their strength and self assurance developed, and soon they flew to the next tree out in the pasture and used it as a base of activity, then progressed to other trees. The parent birds were usually nearby offering protection and food.

As the days passed, the "ky-lee, ky-lee" sounds grew fainter and farther away, and after a week we no longer heard the wild sweet cries of the young falcons. Presumably they had worked their way up to the wooded hill half a mile beyond the barns.

Sometimes a sparrow hawk sweeps gracefully between the evergreen trees or comes to rest on the topmost point of the seventy-five foot balsam, and we hear again the "ky-lee" call.

We look forward to nesting time again, and wonder if the dainty little kestrels will remember, and return to the box high on the end of the barn, and raise another family for us to enjoy.

(Monticello continued from page 32)

animals who worked at Monticello, did not want his mules and wagons going straight up and down the hillside, so he designed circular trails round the mountain which he called his "roundabouts." There were four main roundabouts which interconnected at various places on the mountain. The present trail follows parts of the third and fourth roundabouts. Along the trail, in addition to many of the flowers already mentioned, will be the pink azalea, star chickweed, wild ginger, crested iris and Virginia bluebells.

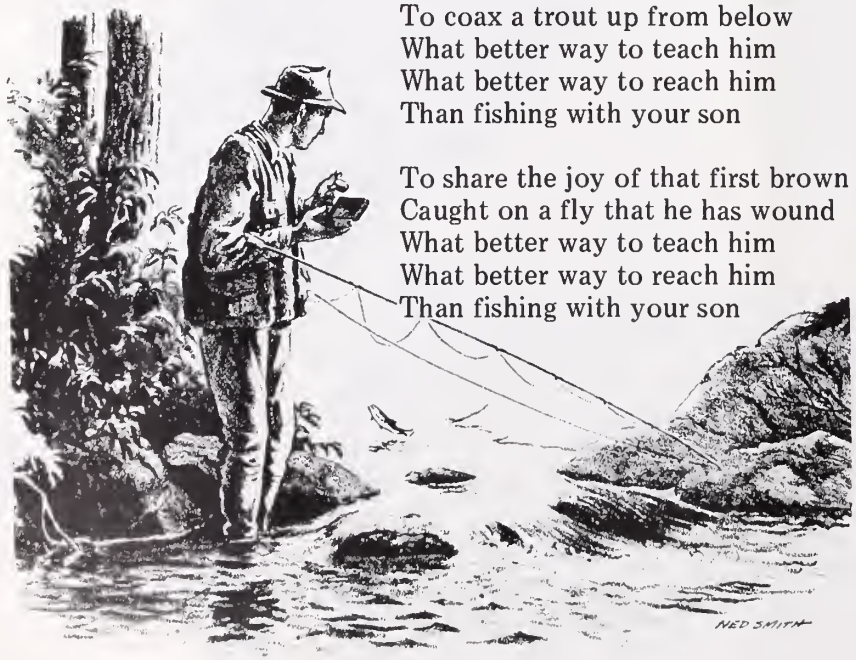
The bellwort will be out in April, as will the columbine, squirrel corn and toothwort. Later on in the summer there will be some black-eyed Susan out in the meadow, golden rod, cohosh and cardinal flower. Mr. Crawford, Superintendent of Grounds at Monticello and co-author of this article, is gradually compiling his own "garden book," a list of the native flowers and when and where they bloom on the grounds, an activity of which Mr. Jefferson would have wholeheartedly approved.

To take a walk along this trail in early spring is a very good start for anyone interested in the wildflowers of Monticello - or just wildflowers anywhere. The flowers are there, courtesy of the Thomas Jefferson Memorial Foundation, for us all to enjoy, and your speculations about life in the eighteenth century as you stroll through these woods may be all your own.

The authors are happy to acknowledge the good offices of the Thomas Jefferson Memorial Foundation during the preparation of this article.

FISHING WITH YOUR SON

By A. C. WAGNER, M.D.



To wade the streams where hemlocks grow
To coax a trout up from below
What better way to teach him
What better way to reach him
Than fishing with your son

To share the joy of that first brown
Caught on a fly that he has wound
What better way to teach him
What better way to reach him
Than fishing with your son

To smile together when the strain
Of trout on leader puts it twain
What better way to teach him
What better way to reach him
Than fishing with your son

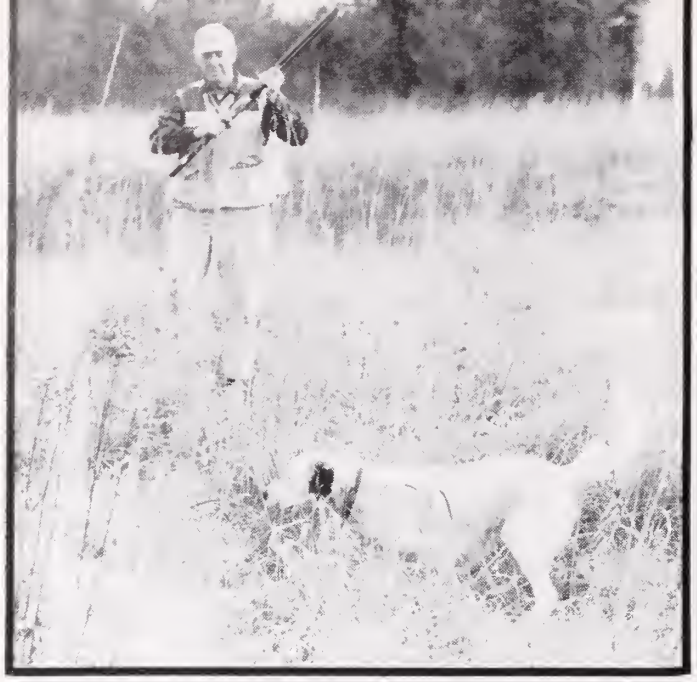
To realize the full import
Of fish returned for future sport
What better way to teach him
What better way to reach him
Than fishing with your son

To learn together how the stream
Must be preserved or lose the dream
No better way to teach him
No better way to reach him
Than fishing with your son

ENERGY - THE BIG TRADE! At presstime we are still involved in the coldest winter in living memory and perhaps the most frigid in the history of weather records. With the factory that prints this magazine working on a drastically reduced schedule along with many other industries, and with homes here in Virginia heated only to barely-tolerable levels, the time may have just arrived when conservationists will be forced to help make some very critical trade-offs. A quote from the Sierra Club's National News Report of February 10 concerning nuclear-generated electricity and the Clinch River Breeder Reactor is a case in point. "In fact, the nation would be safe in postponing the breeder for some time, and if solar and other alternative technologies become available at an acceptable cost in a couple of decades, we may be able to bypass the breeder reactor entirely." A couple of decades? The time very probably has already arrived when all of us involved in conservation need to take a harder look at the choices, and allow ourselves to think about some of the compromises available, before a chilly population decides that being warm and having a job is most important and to hell with conservation altogether. It might be well for some groups to take that foot that is constantly out to trip up any and all new energy projects and retract it just a bit.

FROZEN WATERS BRING SPRING DEBRIS. Ice and its movement in many of the state's rivers will cause problems for boaters when they hit the water in the spring. In the tidewater region estimates are that 90% of the duck blinds have been ripped up by the moving ice and set afloat, often leaving their pilings cut off just beneath the surface. According to Game Commission Safety Officer Jim Kerrick, boaters should proceed with caution and if any kind of hazard is encountered, an attempt should be made to temporarily mark the location until proper authorities can be notified. In some cases, channel markers and other aids to navigation may have been damaged or lost to the severe weather and boaters should proceed with caution. At presstime Game Commission engineer Lloyd Byrd is checking damage done by ice to the Commission's boat launching facilities. While this damage will be corrected as soon as humanly possible, there may be some facilities which will not be in top shape until well into the summer.

DISMAL SWAMP IS COLD WEATHER DUCK HAVEN. Old Dominion University's Dismal Swamp Programs reports that the largest numbers of puddle ducks ever recorded in the Dismal Swamp occured in December of 1976. During one day over 600 were counted. On January first, a female goldeneye duck was spotted on Washington Ditch. This is a saltwater bird never before recorded in the Swamp. Ringbill gulls are also using Lake Drummond - 2,000 have been observed at one time. Swans, Canada geese and coots have been occuring in the hundreds on the Lake. There are two major reasons behind these unusual sightings in the Dismal Swamp this winter: the dryness of last summer, and the extremely cold winter that the area has been experiencing. Last summer's sparse rainfall caused the shoreline of Lake Drummond to recede a considerable distance, exposing the shore to population by numerous plants that would not have grown there otherwise. This vegetation is now covered by the rising water level of the Lake, and waterfowl are finding a significant source of food in these plants. The cold weather is perhaps the major reason why waterfowl are so abundant in the Swamp. Lake Drummond and the ditches in the Swamp freeze more slowly than waters in the Tidewater area, due to their high acidity. Therefore, waterfowl are able to utilize the Swamp's waters when other lakes and canals are already covered with ice. Even after extended periods of subfreezing temperatures, the ditches and Lake remain fairly open.



L. L. Rue photo

A BIRD DOG In Six Months?

By CHARLES D. BAYS

Several minutes had passed since either William Breeding, my hunting partner of several years, or I had seen my three-year-old English Setter. I glanced at Breeding and he nodded back knowingly. I worked up the ridge to my right, while Breeding eased down the hollow through thick honeysuckle. After I had gone about forty yards, I turned to look back down the hill from my new vantage point and caught sight of Sam's cream-colored tail high in the air. I signaled to William and he, my five-month-old puppy, Lady, and I moved slowly toward the spot Sam had the birds pointed. The instant Lady spotted Sam, she froze in honor. The birds held tight and I stopped a few feet away to take a quick picture with my pocket Kodak. Unable to stand the pressure for long, I quickly slipped the camera into my pocket and gained a firm grip on my 20 gauge 1100 Remington. We walked two feet past Sam's nose and the quail thundered into the air. As always, my heart was in my throat as shots rang out in the crisp morning.

Sam and Lady fetched four birds including one cripple, which was a little better than our average on a covey rise. We stuffed the little brown birds in our frayed hunting coats and gave Sam and tiny Lady a generous amount of praise.

William grinned widely and asked, "How many times have we lost sight of Sam to find him locked up on a covey of birds?" "A lot," I replied, "and each time is more exciting."

I train my own bird dogs; not because of financial saving, but because of satisfaction received. Most dog owners will agree that the pride of ownership is greatly enhanced if the individual has trained his own dog.

There are many varying opinions on the proper procedure by which to train a bird dog, and a concise step-by-step program is not practical in the allotted space. However, for the upland hunter who is considering training a pup, I will outline, in this author's opinion, the ten most important things to try to accomplish.

Number one is to know that the pup is of good hunting stock. Do not be overly concerned as to pedigree and registration. (I asked an oldtimer once if his well-trained dog had papers. He replied that the dog pointed birds but couldn't read.) Registration papers are sometimes useful if you plan to breed and resell. It is more important that you, or a trusted companion, have hunted over the dam and sire.

Bringing the puppy home at seven weeks of age is Number two. This is important. Wean the pup from its mother and litter mates at this exact time and gain rapport with him. Play games, feed and take care of him personally. This makes him dependent on you.

Number three is to teach your puppy something. This may sound vague and it is; but once a pup is taught to learn, there is a greater chance of his having a large

An intelligent, well-trained bird dog can mean the difference between a frustrating hunt and a successful one.

L. L. Rue photo

learning capacity. Teach him nothing in early age, and he will usually be uncontrollable in adulthood. Sit, stay, come and fetch can be learned at a very early age. A word of caution: never reprimand at this stage, and be generous with praise.

Using a bird wing as an aid is point Number four. Many things can be taught with a bird wing tied to a small section of fish line and attached to a rod or small pole. (If you cannot obtain a bird wing, a small piece of white cloth will do.) Get your puppy away from all distractions. Fly the wing over his head and get him excited chasing it. Let him catch it and make a fuss over him. Now fly it over him and he'll give chase. Do not let him catch it again. Instead, fly it over him until he begins to tire and light it on the ground a few feet in front of him. He'll stalk it and soon will stretch out on point. "Whoa" him gently. This can be accomplished after a regular series of five-minute sessions. After you have him pointing staunchly, you can make corrections in his pointing style. (Maybe his tail is too low. Gently brush it towards his head with your hand.) Some pups have also been taught to "back" with the use of a bird wing in the backyard or basement.

Number five is to work with your pup a few minutes every day for at least the first two to three months. At the start of this article, I mentioned Lady, a five-month-old puppy, backing and fetching. No doubt some oldtimers shook their heads in disbelief or thought I'd ruin my puppy by hunting her before one year of age. Not so. Spend a few minutes each day of puppyhood in training, and the results will make you a proud owner. A pup is like a small child and one can hold his attention only a few minutes each day. Too much work at a time is non-productive and can be harmful.

Firing over your dog to avoid gun shyness is Number 6. A gun-shy dog is useless to the hunter and there is no reason for this to ever happen to your puppy. Get one of your kid's cap pistols and at each feeding, when the pup dives into the chow, fire the toy gun over him. He'll flinch at first, but after a few lessons he'll never bat an eye. This is the time to advance to a 22 and later on to a 410 shotgun. Don't get in a hurry here and stand away a few feet when advancing to the louder guns. When he doesn't flinch at a 410, stop this conditioning until you get him in the field over birds.

Which brings us to point Number 7. Buy the pup some birds. "Tame" quail can be obtained from independent raisers or shooting preserves. A small pen of mesh wire will hold them and wild bird feed and water will sustain the birds for the short period of time you will have use of them. Clip the outside fringes of the birds' wings in order that they will not fly great distances, and you can return them to the pen after each use. Set the quail out in a field. The bird will run to the nearest cover and hide. Bring the puppy downwind and work him toward this spot. He will point and hold as a rule the first time; but as a safety valve, you may wish to tie a short length of nylon cord to his collar which can be used for restraint if necessary. Staunch him up and pet him lightly. After pointing several times you may want to kick up the bird and kill it for the pup with a small gauge shotgun. It is advisable to do so, but again a word of caution. Do not overwork the puppy on tame quail. You may spoil him. Just get him to point, hold and recognize the practical meaning of "whoa."

Point Number 8 is time spent in the field. If possible, have an older dog along for the first hunt or two. (Be sure the old dog is of good manners.) Your puppy will learn many valuable assets from the veteran dog. Have the nylon cord attached to the puppy and when the old dog goes on point, should the pup not honor, restrain him with the rope. In either case, whoa him up and have your partner work ahead of the pup and the pointing dog. After the covey rises and your companion has shot the birds, release the pup and let him fetch if possible. Also, let him smell where the covey lifted. Repeat this procedure on the singles if necessary and in a short period of time you will have a backing puppy. After a trip or two with the veteran dog, take the pup afield by himself. This will insure that your puppy will learn to find his own birds and not be a follower.

Hunt the pup as often as you can is rule Number 9. As with us on our jobs, the more experience he gains in the field, the better the dog should become. Do not, however, overhunt a young pup on any given day. This may sour him to hunting. When he begins to wilt, quit for the day.

My final point and of utmost importance is to take care of your dog's health. Your hunting dog can only perform as well as he feels. Good feed given at regular times, proper housing, clean water and veterinarian checkups are vital to the performance and longevity of your dog.

Each of the above could be greatly elaborated upon however, if one uses these guidelines and common sense, the trainer should have a pointing dog of which to be proud for many hunting seasons.

Sorex The Water Shrew

By CARSTEN AHRENS

I call her Sorex. She's a water shrew and surely one of the most "mini" of mammals. I'm certain she is underestimated, unloved, unappreciated. She's considered greedy, pushy, irascible.

When Carl Linnaeus, the Swede, back in the 18th century, decided on the term "mammalia" to include only those animals that produce milk and suckle their young, he discovered a huge "class" to deal with. Around the world, the females of some 3,500 species raise their young with the aid of these spectacular glands.

He also discovered these animals could be identified further by being covered (at least most of them) with hair, or modifications of hair, as the wool of sheep, fur of mink, bristles of the hog, quills of the porcupine, even the "shell" of the armadillo.

And he learned, as he brought some kind of order into the classification of living things, that in no class was there such a wide divergence in shape, size, weight, and appearance as in mammals. Thus the blue whale, an aquatic mammal, may grow to 100 feet in length and weigh 150 tons; the African elephant, a terrestrial mammal, may stand 13 feet high at the shoulders and weigh 12 tons; while Sorex, the water shrew, at the opposite extreme, at home on land or in the water, is just 3 inches in length (plus a 3-inch tail) with a weight of about 15 grams. It would take three water shrews to make an ounce!

No mammal seems so constantly at odds with everything in her environment, and it's probable no other mammal has such a high rate of metabolism. Shrews are hungry all the time and Sorex, the water shrew, was no exception. She was born in May, one of six pink, naked, blind, wiggling bits of protoplasm in a nest, a hollow ball of dried grasses, just off the main tunnel leading in from an overhanging bank of a mountain lake. A variety of coarse grasses and a tangle of coral tearthumb flowers tumbled over the edge hiding a view of the entrance. When winds blew from the east, the lake water moved up the tunnel, but it never quite reached the nest.

The six wee ones, true shrews, were always hungry; their mother remained in the nest only long enough for them to drain the milk her glands would manufacture. Sorex observed her mother had six nipples and there were six to use them; had there been a seventh shrew, it surely would have starved. . . . and would have been eaten.

The young shrews developed rapidly. Soon they were clothed with the dense, waterproof, black fur of water mammals; soon their eyes opened; and when they could run about, their mother left them. The childhood of shrews is short.

You may have watched the parents of fox cubs play with their youngsters or little otters frolicking with their mothers in the water. This doesn't occur in the parent-offspring relationship of shrews. It would be too dangerous. Each tiny mouth holds 32 sharp, white teeth that always seems eager to bury themselves in something to eat. So in a matter of days, the family completely broke up; each member, a solitary creature, went his or her way, driven day and night by a hunger that only a big meal could briefly allay and make a short rest possible.

There are some 100 species of shrews found around the world and about three dozen live in the United States; yet, small as she is, Sorex, the water shrew, is one of the larger species. And while bats are nocturnal and woodchucks are diurnal, shrews are active both day and night. Never were animals so constantly in motion. There is no herd instinct, no time for play or for courtship. Mating is the briefest of encounters and motherhood just something to be endured for the shortest possible time.

Shrews seem peevish, constantly discontent, everlastingly hunger-ridden. Many animals hibernate but not shrews. Their overwhelming appetites would never allow them to fall into such a profound slumber. Some animals store up food against the winter but not shrews; anything edible, captured or found, is devoured on the spot. Many animals live for decades, but a shrew is a patriarch if it is still alive at 18 months.

When all the rest had left the nest, Sorex remained and made it hers. She soon learned she was quite at home in air or water. She took a short nap after a successful encounter with a cricket or an earthworm, but it wasn't a restful nap. She twitched in sleep, reliving in dream the battle with the creature she had already consumed. Then very shortly she was once more on the go, seeking more food. Carrion would serve if no living food was available. She considered a day successful only if she could eat several times her weight. Often she took to the water where she found round and flat worms, or the larvae of aquatic insects among or under the stones on the lake's bottom or in the submerged vegetation.

The long guard hairs that protrude through the dense fur of muskrats or beavers become wet and cling to the underfur without trapping air when the animals dive into deep water. They can stay down effortlessly. Not Sorex. Her thick fur holds air bubbles and the miniature animal has to swim constantly to stay under. Should she stop her efforts for a moment, the entangled air would rocket her to the surface like an angler's bobber.

Unlike her terrestrial cousins, Sorex, the water shrew has somewhat larger hind feet. And each rear foot is edged with long hairs that make her an excellent swimmer. She moves effortlessly along the surface, with speed and even grace; it is only when she seeks the depths that constant efforts are necessary. Then she resembles a silvered mouse moving through the water; she shimmers like a lure made of quicksilver, and a pickerel, muskellunge, or a trout considers her a treat for an empty stomach. So underwater she often endeavors to keep to reedy patches, among rushes and cattails.

An angler or a hunter might mistake Sorex, the water shrew, for a mouse; superficially the two are something alike, both being small, furred, tailed animals. Both are furtive, and the outdoorsman, looking for the cause of a sudden rustling in the dry leaves, will see just a flash of a dark, counter-shaded form. But actually mice and shrews are most different. Shrews have five toes on the front feet; mice, four. A shrew has a long, well-whiskered snout. . . it's almost a proboscis. . . with a shark-like mouth under the head; eyes so small and beadlike you'll have to look carefully to see them; and ears that are quite concealed in the thick fur. In contrast, the face of a mouse terminates in its mouth; the eyes are large and luminous; the ears, very evident. While a mouse relies on all its senses to gain information about its world, the shrew depends chiefly upon its whiskers to bring in what should be known about the surroundings. Shrews often take over the sub-surface runways of mice who flee in terror from the voraciousness of the intruders.

My Sorex, I'm afraid, is an anti-heroine. She was killed by a dog whose lip was badly lacerated by her teeth in a most one-sided fight. I wish I might write that the fatal encounter found Sorex defending her family, but that wouldn't be true. She had just left her offspring to fend for themselves. The dog sniffed disdainfully at her mangled body but scorned to eat it. Shrews have a ventral and two lateral scent glands that give them their characteristic odor that is sufficiently repellent so that only very hungry carnivores will stomach them.

Sorex, the water shrew, and her numerous relatives make up a most important fabric in ecology's intricate web of life. But they'll never be popular. No one would select a shrew for a pet: they are so tiny, they are measured in grams instead of pounds; so ephemeral, their life spans are measured in months instead of years; so hungry, their days and nights are spent in a constant search for nourishment; so anti-social, they seldom tolerate another creature about . . . even another shrew; and so viciously sharp-tempered, their very name, applied to a human, is considered an insult!

Freshwater Bass in Saltwater Country

By CURTIS J. BADGER

For the saltwater fisherman, Virginia's Eastern Shore is a paradise. The waters that surround this rural strip of farmland have been yielding their ample gifts to anglers for centuries. It was back in 1613, so I'm told, that the British colonists discovered what the Indians had known for generations: that the Eastern Shore is an angler's nirvanna.

It was in that year, local history buffs say, that the illustrious Captain John Smith sent a party of men to the Eastern Shore to locate fish and game for the struggling colony. A Captain Samuel Argoll led an expedition to the Shore, and in short order determined that the Shore yielded "a great store of fish - both Shel-Fish and other." Argoll evidently knew what he was talking about, because the Jamestown colony promptly established a permanent camp on the Eastern Shore to provide the colonists with fish and salt, which was distilled from seawater on one of the barrier islands.

What Argoll didn't find out, and what a lot of people don't realize today, is that the Eastern Shore also possesses a great store of bass - both largemouth and other. Mention the word bass to an Eastern Shore angler, and his face will become aglow as he conjures up visions of mammoth stripers pulled from barrier island surf. "But, no," you say, "I mean the freshwater variety, the largemouth bass." Then the smile becomes one of condescension as he patiently listens to you expound on plastic worms, Big O's, and River Runts. After all, who could possibly consider fishing in some murky little freshwater pond when there is all this expanse of super-productive salt water around?

Well, I for one. Nothing against saltwater angling, mind you. I love it. But I also love going after largemouth bass; I'm an equal opportunity fisherman.

What I like about bass is that I can fish for them almost year 'round. It's a great cure for the March doldrums — that sportsman's netherworld linking the end of hunting season with the first flounder runs in mid-April. Bass fishing provides immediate relief. After a few warm days in a row, I can hike back to a local farm pond and usually catch fish. Not as many as in later spring, perhaps, but with a little patience and luck, I can still catch fish.

The undisputed leader among Eastern Shore bass fishermen is George Phillips, an Onancock baker who pursues the largemouth with unbridled passion. George catches bass every month of the year, plus he's an accomplished saltwater angler.

If there are any doubts about the productivity of Eastern Shore bass holes, a look at a few of George's trophies will dispel those doubts. On the wall of George's bakery, right over the sweet potato pie rack, is an 8-pound, 10-ounce specimen that was pulled from a small farm pond a few summers ago. More recent catches include three bass that top 10 pounds, and an estimated 50 that go over 8-pounds. Six years ago George earned the Sports Afield best-in-state award with a 2-pound, 14½-ounce black crappie, and he's won 13 Field and Stream awards for various freshwater fish. All were taken from small ponds on the Eastern Shore, just minutes from some of the best salt water fishing on the east coast.

The Eastern Shore has lots of good bass ponds, but many are tucked away in dense pine forests and on farms away from public roads, so most fishermen simply don't realize they are there. I had no idea the Shore had so many potential bass ponds until I took an airplane ride up and down the peninsula recently.

"There are at least 20 good bass ponds on the Eastern Shore," says George. "Most of them are small, but there is no fishing pressure whatever. You can fish all year and see maybe three of four other guys."

The ponds are productive, too. "They're just as good as the ponds in Maryland and Delaware that get all the publicity," says George. "They're probably as good as any on the east coast. I've caught several 10-pound bass and I've seen some that will go well over that. I saw one in a pond near Belle Haven last summer that would easily go 13 to 14 pounds."

Most of the Eastern Shore freshwater ponds are man-made irrigation ponds or borrow pits. Several were dug in the 1960s when U. S. Route 13 was expanded to four lanes and large volumes of fill were needed. Many of these ponds are now producing big bass.

Nearly all the ponds are on private property, so the landowner's permission is required prior to fishing. "Most of the people who own ponds don't mind if you fish them," says George, "as long as you get permission and are careful not to abuse their property."

One of the few public ponds on the Eastern Shore is at the Virginia Truck and Ornamental Station near Painter, and it has been a consistent producer of bass for years. The "experiment pond," as it's known locally, is one of the most heavily fished ponds, yet three people fishing the pond at the same time would be considered a crowd. That's how limited the interest in freshwater fishing is.

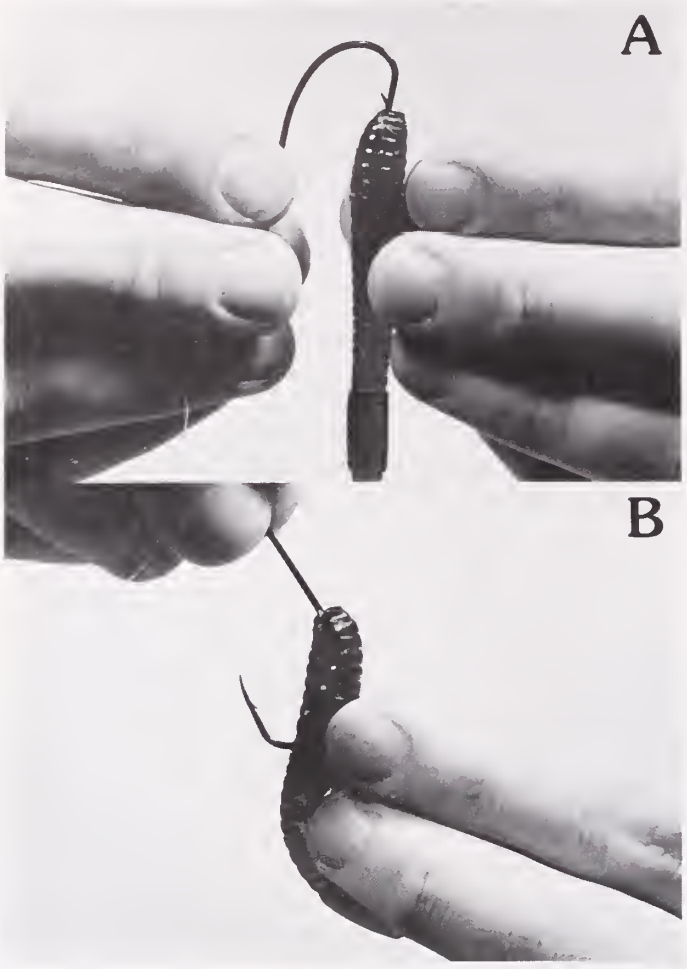
Probably the most productive lure for fishing the Eastern Shore ponds is the plastic worm. "Most of the big bass I've caught were taken on the plastic worm," says George, "although in the spring shallows runners like the River Runt are good."

Both six-inch and nine-inch worms are productive. The best method is to rig them weedless on 3/0 or 4/0 hooks and fish them around stumps and other cover. Purple, blue, and black, in that order, seem to be the best colors. Fishing the worms slowly and enticingly is standard operating procedure, but if the action wanes, try a few fast retrieves. They might pay off.

I think you'll find that Eastern Shore bass fishing is not unlike bass fishing most other areas of the state, with the exception of the large reservoirs. Tackle and techniques that are productive in ponds west of the Chesapeake will likely work on the Eastern Shore. But there is one factor that sometimes develops at popular lakes and ponds west of the bay that will not be encountered in Eastern Shore bass fishing. You'll never have to fight the crowds.

Plastic worms are super bass bait. See next page to find out how to rig 'em. Below: George Phillips displays a nice nine-pounder taken from a small Eastern Shore farm pond.

How To Rig A Plastic Worm



A. A 4/0 hook is inserted in the center of the worm.

B. The hook is pulled through, about a half-inch from the end of the worm.

C. The worm is pushed to the top of the shank of the hook.

D. The barb is again embedded in the worm.

E. And the worm is adjusted to provide a natural appearing, highly effective bait that will not snag.

Conservation Short Course

GIVE YOUR SUMMER VACATION A THEME—CONSERVING VIRGINIA'S NATURAL ENVIRONMENT!

Take two weeks away from the pool or painting the house to plunge into a whirl of lectures, field trips, demonstrations and study designed to give educators an opportunity to learn more about the environment in which they live.

This college short course in conservation of natural resources could be the solution to your summer doldrums. You will gain exceptional insight into Virginia's geology, marine life, soil and water, forests and wildlife in the Natural Resource Conservation Course offered this summer for college credit by the Virginia Resource-Use Education Council.

The course basically provides advanced conservation training for teachers, thereby increasing the effectiveness of resource-use teaching in Virginia schools. Those teaching in the Natural Science field have the most to gain but teachers in other disciplines have found the course invaluable.

WHEN AND WHERE: June 13-June 30, 1977, at Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

July 1-July 22, 1977 at Virginia Polytechnic and State University, Reston, Virginia.

July 11-July 24, 1977 at Virginia State College, Petersburg, Virginia.

July 18-August 5, 1977, at the College of William and Mary, Williamsburg, Virginia.

CREDITS: Five quarter hours credit will be given for satisfactory completion at Virginia Polytechnic Institute and State University; three semester hours credit will be given for satisfactory completion at Virginia State College or The College of William and Mary.

SCHOLARSHIPS: A limited number of scholarships will be available to Virginia school teachers from funds provided by several interested organizations. All Virginia school teachers are eligible to apply. In order for an application to be considered it must be received by May 2, 1977.

ENROLLMENT FORM:

To apply, complete and send this form to: Virginia Resource-Use Education Council, c/o E. W. Mundie, Setiz Hall, VPI&SU, Blacksburg, VA 24061. Be sure to mark the college of your choice.

_____ VIP&SU at Blacksburg
June 13-30

_____ VIP&SU at Reston
July 1-22

_____ Virginia State College
July 11-29

_____ The College of William & Mary
July 18 - August 5

Date _____ Name _____

Address _____

I should like to apply for one of the scholarships. Please send me the necessary forms.

Signature of Applicant _____

Sex and the Single Wild Turkey Gobbler

By BILL WEEKES

You will get more out of turkey hunting if you think like a detective," stated the great Dr. Gallopavo, his wrinkled dome dully reflecting the amber pale light of the lecture room.

"Only by knowing what clues to look for will you appreciate to a greater extent the intricacies of nature, the cyclical sequence of events life is heir to. To know is to appreciate!"

"Who asked about the age of the wild turkey near the close of yesterday's class?" Dr. Gallopavo asked.

A young man in the back, obviously a turkey hunter by his haggard visage, raised an arm lethargically.

"Ah, yes, Mr. Silvestris. You asked how a hunter can determine the age of a turkey he has harvested? There are two types of turkeys—the young and those older. When we say "young' we mean birds of the year. Older turkeys are those in their second year or older."

If there is a fall hunting season, November 15 should fall within it, and young turkeys harvested at this time should be somewhere between four and five months old. Spring gobbler season should probably include April 15 when young gobblers are 10 or 11 months old.

"With these time periods in mind, a hunter can begin his detective work," Dr. Gallopavo announced.

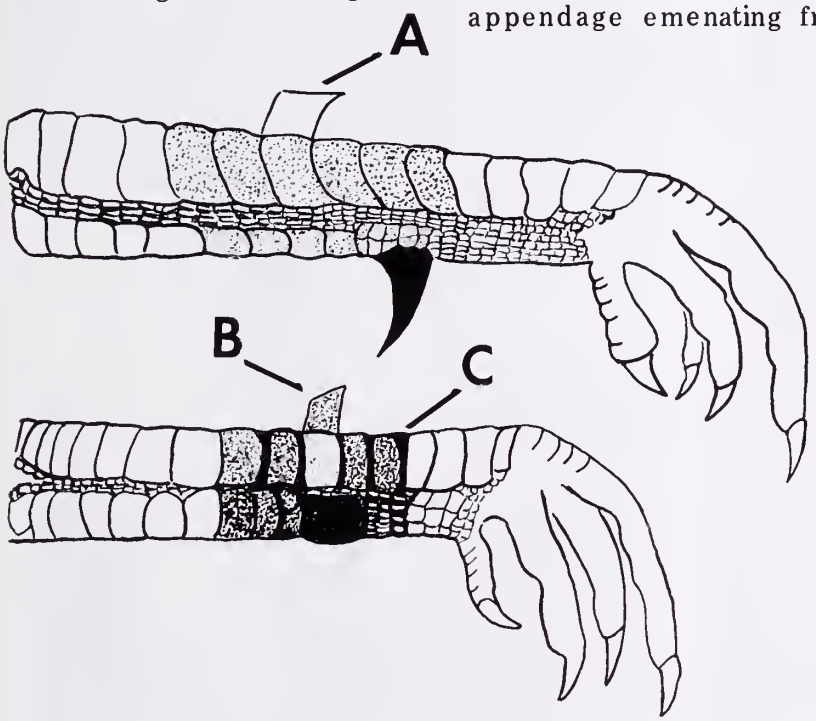
There are, first, obvious differences between the juvenile and adult gobbler. A good average size for a young tom in his first fall is 10 pounds, for an adult gobbler the average is about 17 pounds. Spurs, a stiff horny process on the posterior side of the turkey's foot, reach full development in the adult and with age (3 or 4 years) become sharp, but seldom exceed 1¼ inches in length. In first year males, spurs are only buttons. In birds older than 4 years, the spurs curve up. The average length of the adult spur in eastern wild turkeys is about three quarters of an inch.

"Some sources consider any spur more than 4/10 of an inch to belong to an adult," the professor pointed out. "While the color in the adult spur is dark, with a hard glossy surface, the spur of the young gobbler is light, with a soft surface."

Another index distinguishing mature and young males is in the coloring of the tarsometatarsi, that bare scaly extension below the

feathers of the leg that terminates in the toes. It is analogous to the human ankle and foot.

"There are two reasons for this," the professor expounded. "First, in the young birds the tissue under the scales is of paler red. As the bird matures, the red becomes more vivid. Second, in young birds, pigments are deposited in the scales which gradually diminish after the birds reach eight months of age."



The foot of the mature (top) and immature male turkey will show a difference in addition to the presence of length of spur. In the mature gobbler, an upturned scale shows that it is clear (A) and lacking pigmentation, while the underlying color density (red) is apparent. With the immature bird (below), pigmentation is present in the scale (B), while beneath the scale there is a paler color red than found in the mature bird. The scales on the outer surface are darker than those of adults and the pigmentation is denser in the region where the juvenal scales overlap (C).

The dark pigment, melanin, acts to strengthen the scales (as well as the feathers), but being dark in color serves to mask the fainter red of the tissues beneath the scales of the young bird. With the adult however, the pigment disappears and the scales become transparent, thus revealing the greater red vividness of the tissues beneath the tarsus.

"Therefore, as a detective in the field, the hunter in the fall will note the dark coloring of the tarsus and know the bird is of the year. In the spring, the tarsi of some of the young birds may be clearing up, while the darkness of others will still be discernible," Dr. Gallopavo related. He also noted that the tarsi of older toms were generally more than six inches long with scales noticeably thick, horny and rough.

"Wouldn't the easiest way to tell a young bird from an old be simply by looking at the beard?" clucked Mr. Silvestris from the rear.

"Quite so," Dr. Gallopavo uttered. "The beard is a bristle-like appendage emenating from the breast. The bristles are not hairs, but primitive feathers issuing forth in bundles from follicles."

Young toms have shorter beards, and because beards never stop growing, one would assume the older the male, the longer the beard.

"However," the good doctor announced, poking the air above him ominously, "such is not the case. Bristles break and wear away through the years so that beard length is an imperfect index for measuring age."

Several sources agree that even the oldest gobblers will seldom carry beards much longer than 12 inches. In birds of the year the beards will first manifest themselves in late October or November and will measure 1 to 2 inches long, but will show as mere protuberances coming out of the breast feathers. Hunters who harvest young birds the following spring will find beards (with a burnt appearance) no more than 3 inches long. Young toms in their second fall (16-17 months) should have beards 3 to 4 inches long. Some sources say two-year-old toms bear beards 5 inches long and those of three-year-olds, up to 8 inches.

"Gobblers older than 2 years are presumed to have beards measuring more than 5 inches," the professor noted.

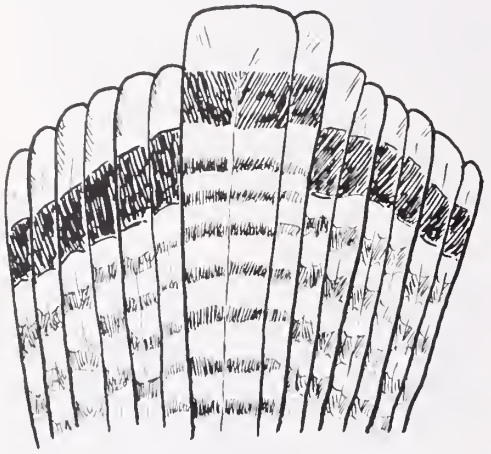
But with plumage, there is the real test for the turkey hunter who would be detective, the professor pronounced. "With gobblers greater than two or three years of age, there have been no satisfactory methods of determining age in the wild turkey," said the professor. But with young birds — birds less than a year old — plumage can be a very precise clue to age."

"Young turkeys undergo three molts before their first winter," Dr. Gallopavo announced. "Even before they are hatched, poults have already commenced feather development, and this is followed by a post-natal, post-juvenal and first-winter molt." Dr. Gallopavo returned to the blackboard where he undraped a large drawing which displayed the feather arrangement of the mature turkey.

"Since the primaries and tail feathers (retrices) are our main clues, we shall confine our discussion to their formation," the professor ordered.

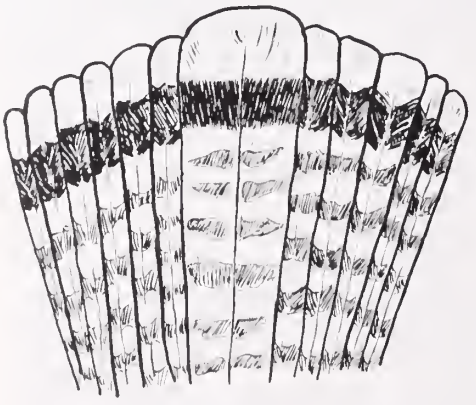
The primaries are the outer ten feathers of the wild turkey's wing and are numbered according to their sequence of replacement — from the inside (nearer the body) out. The outer primary (the most distal) is No. 10 or P-10, the inner primary (the most proximate) is No. 1 or P-1.

The tail feathers are another clue as to whether or not a gobbler is a first year turkey. At the end of a gobbler's first week of life, its tail and body feathers begin to replace the natal down. By the fifth week replacement of the retrices begins. In the turkey the feathers molt from the center outward — the middle pair first, the next pair next, until all 18 retrices (or nine pair) are replaced.



Immature

By the 14th week all tail feathers are postjuvenal and by the 15th week the first winter molt is initiated by the replacement of the two central pairs of tail feathers. Since these replacement retrices are considerably longer than the other postjuvenal tail feathers they are noticeable both to fall and spring hunters. In the immature bird the contour of the tail feathers are uneven. Not so with the adult tom.



Mature

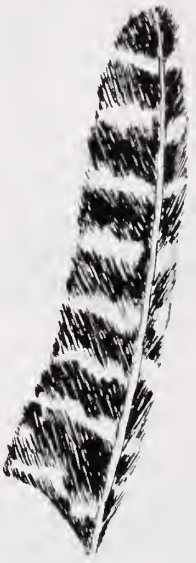
"Thus it would seem that for fall hunters the arrested No. 8 primary and the singular appearance of P-9 and P-10 are the clues to male poult age while the latter two feathers plus the uneven contour of the middle pair or two pairs of retrices are a telltale sign to a tom's immaturity.

At hatching Numbers 1-7 have already formed and each is about one-half inch long. By 14 days P-8 appears and by the fourth week P-9 emerges. During week five, however, not only does P-10 show up, but the postnatal P-1 drops off as the P-1 postjuvenal emerges. Then, week-by-week, the early primaries drop off to be replaced by the postjuvenal feathers.

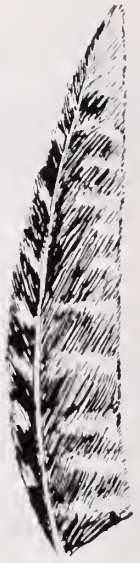
"We have already assumed that most turkey poults during the fall (November) hunting season will be somewhere between 16 and 20 weeks," Dr. Gallopavo reviewed. "If this be so then most young gobblers will show a short No. 8 primary, and a P-9 and P-10 which has not realized a postjuvenal molt. These latter two feathers can be easily discerned by their singularity. Postnatal P-9 and P-10 will be pointed, gray and lack definite white bars, while the other primaries, the "adult" postjuvenal feathers, will be more rounded, colored white almost to the extreme tip with the barring very apparent."

"What about the spring gobbler season, Dr. Gallopavo? Will the Number 8-10 feathers remain different than the other primaries at this stage?" Mr. Silvestris queried.

Dr. Gallopavo was quick to answer: "Because the No. 8 postjuvenal primary's terminal length is realized when the poult is about 200 days old, this means the primary will be fully extended by December so that it can't be an index for gobbler hunters in the spring. However, first year poults should still be retaining their postnatal P-9 and/or P-10 by April because they are not replaced until the young turkey's molt during its second summer, or fall."



Mature



Immature

Indices of age in the mature and immature male are the uneven contour of the retrices (tail feathers) and different appearance of the outer, No. 10, primary feather.

Dandelion

By SUSANNAH E. FELDMAN

Mortals will always write about events of importance and of things both great and small. Here I herald, with full trumpetry and esteem, that which few writers condescend to mention, the dandelion. An eyesore in the rows of horticulturally approved wonders of the soil, maybe, but when it appears in circles of gold in a dew-wet lawn, caressed by the gentle light of morning, it is truly the gem of nature's garden.

This internationally known yellow-flowered plant, (Taraxacum officinale) of the chicory family, abundant as a weed and prolific in growth, is the wholesome product of clean fresh fields the world over. Its disc-shaped flower, a pinwheel of fine golden rays, dazzles the beholder and is as a magnet to the winged insects of early spring. Dandelions were known by the North American Indians as "Strong Root," and were used as an edible green in spring. Colonists also used the green as a food supplement and made a wine and a health drink from the flowers. Tenacious in nature, the dandelion has survived since the tenth century when it was first recognized for its medicinal properties, under the name Tarakhshagun in the writings of the Arabian physicians. The dandelion was also known as Lion's Tooth, because the jagged serrated leaf pattern resembled the teeth of a lion. Disliking the extreme heat, it thrives in the cool protection of other larger weeds of the fields, and on the hottest days this little flower very ingeniously closes house by folding its petals completely to evade the sun's hot rays. The puffball housing the seeds of the dandelion appears after the flower has gone, and is a delicate network of down and seeds in the shape of a bubble.

The dandelion is rich in legend and superstition. The seed is used as a barometer in predicting the weather; if on a windless day, the seeds fly off the seed-hub, the elements are sure to be harsh. Lovers see the seed as nature's prophet, the medium through which divine authoritative decisions are given. They tenderly pick the puffball and, holding it high, blow on the down and recant with each blow: "He loves me. . . He loves me not," repeated until each tiny seed is parachuting through the air. And if the last seed is launched on the recant of "He loves me," then all is well and a lover is faithful. Another variation in determining if a wish will come true is to blow on the puffball, and with each blow recant: "Yes . . . No . . . Yes . . . No," and if the last dainty seed releases its hold of the seed-hub on the "Yes" blow, the wish is sure to come true. Old legend connected the dandelion with an embarrassing childhood nocturnal habit, and because of it, always the admonition was: "Don't pick the dandelions." This, of course, was a misconception, as the dandelion supposedly is beneficial as an alleviative, and will actually help favorably such ailments and miseries. The herb vendors of times past were known as "Green Men"; traveling from village to village in European countries they would put up at the local inns, and from there preach the herbal lore and praise the virtues of their product, of which, no doubt, the dandelion was a prime example.

So let us recognize these brilliant composites of the fields for their true worth in medicinal properties, as a food supplement, and for their decorative value generally. And, in appreciation, let us bow before the humble dandelion that has earned for itself a well-deserved niche in the pages of the herbalists, and may it long continue to brighten our fields with its radiant golden glory.

By JOHNNY FRANKLIN

Today, house-trailers and housing developments are rapidl

Wringing

Several years ago, the 222 Remington was unquestionably the most popular varmint cartridge and probably the choice of eighty percent of the benchrest shooters in the United States. This is a magnificent tribute to the technical and public relations staffs of the Remington Arms Company who developed and promoted the round from scratch. But a lot of bullets have been fired since then and other rounds have begun to challenge the triple deuce in both categories.

For chuck hunting the now factory-loaded 22-250 has pretty much eclipsed it and other cartridges such as the 222½, and most recently the .22 PPC have usurped its position among the sandbag set.

Personally, and I realize this is heresy, I have never been particularly fond of the 222. This attitude stems from my earliest experience with the cartridge back in the 60s. At that time I fervently believed virtually everything written in the "gunnies." The scribbling of the gun scribes took on the proportions of the Holy word as far as my shooting and experimentation were concerned. I soon found out that a standard-barreled 222 wouldn't outshoot my old Winchester 43 218 Bee and, as a matter of fact, with handloads it was pushed to equal the Bee's performance. I have owned three 222s since then, a short-barreled 700, a 22-incher, and the heavy barreled varmint model of my present battery.

I have never been sufficiently affluent to afford the luxurious Sako or any of the more expensive rifles chambered for the round and therefore my experience is restricted. I have seen the Sako do a splendid job of grouping and I am certain no small amount of this accuracy was a result of the minimum chambering and other close tolerances the Finns demanded of their production line.

The Remingtons varied in their performance. My first 222 was a short, stiff-barreled 700 which would deliver consistent one-inch groups with Remington factory ammunition. I never beat 1¼ inches with handloads in it and the longer barreled 700 I traded for did no better. I even glass bedded the 22-incher with no significant improvement in accuracy. I also tried free floating the barrel with equal lack of success.

I think the reason for the mediocre accuracy was that I was using the wrong powder. I stuck with 4198 for numerous seasons and finally came to the conclusion that it wasn't the optimum propellant for loading the 222. I also stayed with the 50-grain bullet, although I did a little experimentation with the 40 and 45 grain weights. These wouldn't shoot either.

At the end of this testing and retesting I had had a great deal of fun because the triple deuce was and is a pleasure to shoot and, as an added incentive, it cost me relatively little to reload. I decided to give it one more chance; I bought a Varmint Model 700 and topped it with a Redfield 3200 target scope in 16 power. This compromise (half varmint rifle and half benchrest rig) was all I could afford at that particular point in time. I couldn't buy an outfit for each sport.

How did it work out? Well, the gun is just what I intended it should be — a compromise. It will deliver one-half inch groups with certain handloads but the 16 power scope is too low powered for serious benchrest competition and the gun itself is underpowered and too heavy for strictly varmint hunting. But it is a good

placing my favorite chuck dens in many rural communities.

Out A 222

compromise. If the chucks aren't too far out, and, if the bench competition isn't too stiff, it will cut it.

The answer to the $64,000 question of how I got the rifle to shoot respectable groups is found in a wise selection of powder and bullets based on personal experience and not textbooks.

My first handload through the Varminter proved to be a good one. Twenty-three grains of H-4895 and the Remington 50-grain powr-lokt hollow point produced one inch groups at 100 yards. An additional half grain of the same propellant shrank the groups to one-half inch. At this point I had never shot factory loads through the gun and it was a long time before I ever did. The Remington quality control apparently deteriorated though, because the second box of powr-lokts I purchased wouldn't group. I then switched both powder and bullets to get another combination that would give one-half minute accuracy. This time I went to the 53-grain Hornady match bullet and the load the Hornady handbook recommends for 50-55 grain bullets— twenty-three and one-half grains of Ball C-2. This load shoots equally well and the bullet opens up better on groundhogs.

The Nosler match bullet performs as well in the accuracy department over the same powder charge, but the Sierra version doesn't. I realize that the explanation for these vagaries could be the eccentricities of my gun's barrel, the seating depth, the case length, or 50 other myriad variables but this has been my experience. The only hunting bullet to give comparable accuracy in my varmint model was the really weird concoction of twenty-four grains of 4064 and the Sierra 45-grain spitzer!

As far as groundhogs are concerned, my loads have been consistent killers out to 200 yards. Beyond that distance I don't shoot because the match bullets just don't have the remaining energy to open properly at that range and sure kills are marginal.

I have never tried the SX pills in my gun but judging from my experience with other bullets of similar shape and design, I doubt they would meet my standards of accuracy for the 222.

At this point I would like to dispell another fallacy about handloading for the 222. I use only 6½ primers for all my handloads in the 222. I tried the much touted magnum primers and the new 7½ and accuracy suffered. I feel the case is just too small for the additional flame and brisance of the magnum numbers.

My conclusion is that if a man has to settle for a varmint rifle that is inexpensive to shoot and which will also have to serve as his benchrest rig, I would recommend the 222. It's not the best in either department but will do an adequate job at both.

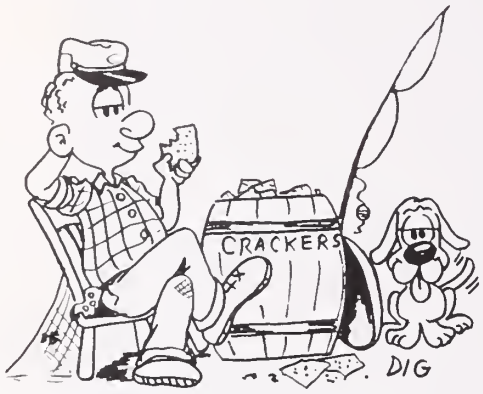
There is definitely a place for the triple deuce. Today's crowded conditions in the East are making shots shorter and its mild muzzle blast is certainly a plus factor in congested areas. Unfortunately, house-trailers and housing developments are rapidly replacing those favorite chuck dens in many rural communities.

Would I sell my 222? I think not because with current economic conditions it may again become the only varmint-benchrest rig I can afford. If given the money for a choice, I would prefer the 22-250 and .22 PPC respectively but when push comes to shove the old triple deuce will do in a pinch. I think its great but-- and may the shooting gods forgive me-- just a tadbit overrated.

IT APPEARS TO ME...

A Conglomeration of Comments, Cumshaw and Cogitation

BY CURLY



. . . A PERSON OUGHT TO HAVE ONE!

Bird Watchers . . . you should be aware of a free publication entitled "How to Manage Woodlands for Birds." Although written especially for persons with woodlands, the tips, hints and suggestions are applicable to the suburbs as well, with some self-inspired ingenuity. And if nothing else, the pamphlet will spark your imagination. Write for the title listed above and specify (NE-INF-31-76), to Northeastern Forestry Experiment Station, 6816 Market Street, Upper Darby, Pa. 19082.

To those of you that are more serious about the bird business, "Farming and Pheasants in South Dakota" can be obtained free of charge. Fact is, I plan to get one of these pamphlets myself if for no other reason than to revive the bittersweet memory of the hundreds of times that my daddy and I hunted pheasants in our native Minnesota and in the neighboring Dakotas. For your copy write to: Wildlife Specialist, 202 Agricultural Hall Annex, South Dakota State University, Brookings, South Dakota 57006.

I overheard what amounted to some free advice the other day, and it made so much sense that I want to pass it on to you for what it is worth. It seems as though we (at least some of us) have been wasting a lot of potentially useful heat. Hadn't really thought about it before, but after taking your "Sataday nite bath" or what have you, DON'T drain the tub . . . rather let the water remain in the tub until it is stone-cold, thereby taking advantage of water's heat, for which you have already paid good money to bring to that temperature.

. . . For Your Book Shelf

The availability of the recently published "Weather Wisdom" is very timely, in view of the harsh helping of conglomorant glop that has been served the Eastern U. S. this winter. Written by Albert Lee who approaches the subject of weather predictions based on facts garnished with tempting tidbits of folklore, "Weather Wisdom" is truly that. Quoting from the Colonials, Lee writes: "The smoke from chimneys right ascends, then spreading back to earth it bends" as an example of how our forefathers correctly predicted what we know now as an inversion connected with an on-coming storm. If you ain't got it, get it for $6.95 from Doubleday & Company Inc. 245 Park Ave., N.Y. N.Y. 10017.

"The Bluebird" was written by Lawrence Zeleny who has, according to George E. Watson's complimentary introduction to the book, "spearheaded the Audubon Naturalists Society's campaign for bluebird conservation." This 160-page hard cover, which was published by the Indiana University Press in Bloomington, Indiana ($7.95), is something that any bird lover can and will appreciate. However, it is the true Bluebird devotee that will benefit from the liberal distribution of facts which ranges from the life history through the courtship ritual and egg incubation periods to migratory habits. Published in 1976, "The Bluebird" is especially timely in this early part of 1977 when this bird is on the Audubon Society's (Blue List), which is an advanced warning of species which warrant special attention due to the indications that they are approaching dangerously low levels. Order the publication from the Audubon Naturalist Society, 8940 Jones Mill Road, Washington, D. C. 20015.

No matter if you are plinker of cans or an accomplished marksman in regular competition, the forty-years-worth of experience which Larry Koller expertly puts in his "How to Shoot" makes it worth your while. Included in the 200-plus pages are illustrations, photographs, topics and tips all rolled together into a concisely classical guide book to the use of sporting firearms. Priced at $9.95, it is available from Doubleday & Company, Inc. 245 Park Ave., N.Y. N.Y. 10017.

. . . And Then

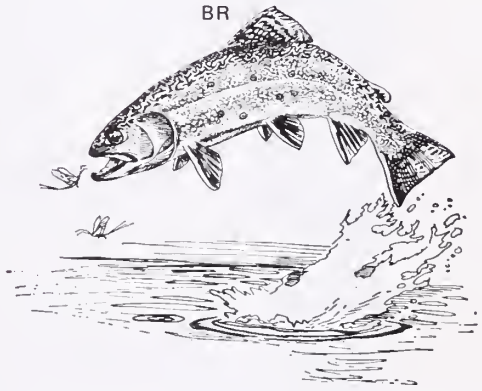
If you are an avid reader of the more than 350,000 pages of the Federal Register which are published each year it might interest you to learn of a quick "up-date" service which is available by telephone. "Dial-A-Regulation", a recorded summary of the forthcoming day's Register, can be heard by dialing Area Code (202) 523-5022 and it is free except for the toll charge.

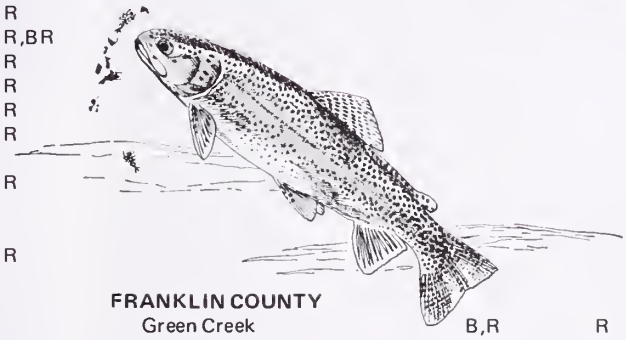
1977 TROUT STOCKING PLAN

Legend: * — National Forest Waters R — Roinbow Trout
B — Brook Trout BR — Brown Trout

	Period Stocked		
	Preseason	May	June
ALBEMARLE COUNTY			
City Water Works	B,R	B,R	
Moormans R (N&S Forks)	R	R	
ALLEGHANY COUNTY			
Piney Branch*	R		
Smith Creek*	R	B	R
Simpson Creek*	B,R		
Pounding Mill Run*	B,R	B	R
Jerry's Run*	B		
Clifton Forge Reservoir*	R	B,R	R
Bratton's Run*	B		
AMHERST COUNTY			
Pedlar R (lower & upper)	B,R	B,R	R
Piney River (proper & S Fork)	B,R,BR	R,BR	R,BR
Brown Creek*	B		B
Davis Mill Creek*	B		B
Enchanted Creek*	B,R		
Little Irish Creek*	B	B,R	
Pedlar River*	R	R	R
Stations Creek*	B		
S. Fork Piney River*	B		
AUGUSTA COUNTY			
Back Creek (proper & S Fork)	B,R	B,R	R
Jerkemtight Creek*	B	R	
North River*	R	R	R
Buffalo Branch*	B	R	
Ramsey's Draft*	B	B	B,BR
Braley's Pond*	B	R	B,BR
Back Creek*	B,R		
Upper Sherando Lake*	B,R	R	R
Lower Sherando Lake*	R	R	R
Heartstone Lake*	R,BR	R	R
Elkhorn Lake*	R	R	R
Rowland Pond*	B		
Cold Spring Ponds*	B	R	
Mill Creek & E. Dry Branch*	B		
BATH COUNTY			
Bullpasture River	R,BR	R,BR	R,BR
Jackson River (No. 623)	R	B,R,BR	R
Spring Run	B,R,BR	B,R,BR	R,BR
Back Creek*	B	R	R
Wilson's Creek*	B	R	R
Mares Run*	B	R	R
Pad's Creek (S Fork)	B	R	R
Little Mill Creek*	B		
Jackson River (Hidden Valley)*	B,R	R	R
Lick Draft*	B	B	
BEDFORD COUNTY			
Hunting Creek*	R	R	R
Battery Creek*	R	R	
BLAND COUNTY			
Hunting Camp Creek	B,R		
Laurel Fork Creek	B,R	R	
No Business Creek	B,R	B,R	
Lick Creek	B,R	B,R	R
Wolf Creek	R,BR	R,BR	R
Lick Creek*	R	R	R
Round Mt. Pond*	R		
BOTETOURT COUNTY			
Jennings Creek	B,R	R	R
Mill Creek	R	R	
Roaring Run	R	R	R
North Creek*	R	R	R
Middle Creek*	R	R	R
McFalls Creek*	R	R	R

	Period Stocked		
	Preseason	May	June
BUCHANAN COUNTY			
Hurricane Fork	B,R	B,R	
Dismal River	B,R	B,R	R
CARROLL COUNTY			
Stewart's Creek	B,R	B,R	
Big Reed Island Creek	B,R	B,R	R
Little Reed Island Creek	R,BR	R,BR	R,BR
Burkes Fork	B,R	B,R	R
Lovills Creek	B,R	R	
Laurel Creek	R,BR	BR	BR
Snake Creek		R	
Crooked Creek	B,R	R	R
CRAIG COUNTY			
Potts Creek	R,BR	R,BR	R,BR
Barbours Creek (N&S Fork)*	R	R	R
Cove Creek*	B	R	
Lipes Creek*	B		
Potts Creek*	R,BR	R	
Broad Run*	R		
Schoolhouse Branch*	R	R	
DICKENSON COUNTY			
Frying Pan Creek	B,R	B,R	
Russell Fork River	R,BR	BR	R,BR
Pound River	R,BR	BR	R,BR
FLOYD COUNTY			
Burkes Fork	B,R	B,R	R
Howell Creek	B,R	B,R	R
Rush Fork	B,R		
West Fork Little River	B,R	R,BR	R,BR
Meadow Creek	B,R		
Laurel Fork	B,R		
Mira Fork	B,R		
Little River	R,BR	R,BR	R,BR
Goose Creek	R	R	
Little River (fish-for-fun)		BR	



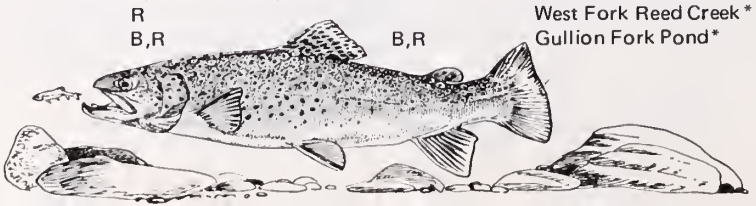


FRANKLIN COUNTY			
Green Creek	B,R	R	R
Blackwater River	B,R	R	
Runnet Bag Creek	B,R	B,R	
Maggodee Creek	B,R	B,R	
FREDERICK COUNTY			
Back Creek (upper & lower)	B,R	B,R	
Hogue Creek	B,R	B,R	
Cedar Creek	B,R	B,R	
Paddy Run	B,R	B,R	
GILES COUNTY			
Big Stony Creek	B,R	B,R	R
Dismal Creek*	R	R	R
GRAYSON COUNTY			
Big Wilson Creek	B,R,BR	R,BR	R

If brown trout are not available for stocking where indicated, Rainbow trout will be substituted.

	Period Stocked		
	Preseason	May	June
Middle Fork Helton Creek	B	B	R
Big Fox (lower)	B,R		
Big Fox (upper)	B,R	B,R	R
Middle Fox Creek	B,R	B,R	R
Elk Creek	B,R	B,R	R
Peach Bottom Creek	R	B,R	R
Helton Creek	R	B,R	R
Turkey Knob Fork Creek	B,R	B,R	
Hale Lake*	R	R	R
GREENE COUNTY			
Lynch River	B,R	B,R	
South River	B,R	B,R	R
Swift Run	B,R	B,R	R
HENRY COUNTY			
Smith River (Philpott)	B,R,BR	R,BR	R,BR
Smith R. (Bassett & Koehler)	R	R	
HIGHLAND COUNTY			
Bullpasture River	B,R	B,R	R
S. Fork Potomac River	B,R	B,R	
Laurel Fork	B,R	B,R	
Jackson River	B,R,BR	B,R,BR	R,BR
Back Creek	B,R,BR	B,R,BR	
Laurel Fork*	B		
Benson Run*	B		
LEE COUNTY			
Hardy's Creek	R,BR	R,BR	R
Martin's Creek	R,BR	R,BR	R
North Fork Powell River	B,R	B,R	R
MADISON COUNTY			
Garth Run	B,R	B,R	B,R
Hughes River	B,R,BR	R,BR	R,BR
Robinson River	R,BR	R,BR	
Rose River	R,BR	R,BR	
MONTGOMERY COUNTY			
Tom's Creek	B,R	B,R	
S. Fork Roanoke River	B,R,BR	R,BR	R,BR
Poverty Creek*	R	R	
Craig Creek*	R	R	
NELSON COUNTY			
Tye River	B,R,BR	R,BR	R,BR
North Fork Tye River	B,R	B,R	R
Stony Creek	B,R	B,R	R
Rockfish River	B,R	B,R	
PAGE COUNTY			
Cub Run*	B,R	B,R	
Pitt Spring Run*	B,R	R	
Upper Passage Creek*	B	R	
PATRICK COUNTY			
Dan River (below powerhouse)	B,R,BR	R,BR	R,BR
Dan River (above powerhouse)	B,R	R,BR	
Rock Castle Creek	B,R	B,R	
Round Meadow Creek	B,R	B,R	
Mayo Creek (N&S Fork)	B,R	B,R	
Poorhouse Creek	B,R		
Big Ivy Creek	B,R	B,R	
Ararat River	B,R		
PULASKI COUNTY			
West Fork Peak Creek	B,R	R	
RAPPAHANNOCK COUNTY			
Piney Branch	B,R	B,R	
ROANOKE COUNTY			
Roanoke River	B,R,BR	B,R,BR	R
Tinker Creek	B,R	B,R	
Glade Creek	B,R	R	
ROCKBRIDGE COUNTY			
Mill Creek	B,R	B,R	R
Irish Creek	B,R	B,R	R
South River	B,R	B,R	
Elk Creek	R	R	
Back River	R	R	
ROCKINGHAM COUNTY			
North Fork Shenandoah River	B,R	B,R	R
Dry River	B,R	B,R	
Briery Branch	B,R	B,R	
Silver Lake	R		
Boone's Run*	B,R		B,R

	Period Stocked		
	Preseason	May	June
Shoemaker River*		R	B,R
Blacks Run*	B,R		R
Gum Run*	B,R		R
Skidmore Fork*	B,R		R
Slate Lick Run*		R	R
Briery Branch*	R		
Briery Lake*	B,R	R	R
Hone Quarry Lake*	B,R,BR	R	
RUSSELL COUNTY			
Copper Creek	R	R	R
Thompson Creek	B,R	R	R
Big Cedar Creek (fish-for-fun)	R,BR		
Laurel Bed Lake (fee fishing)		B	
SCOTT COUNTY			
Little Stony Creek	B,R	R	R
Big Stony Creek	B,R	R	
Devil's Fork*	R	R	
Stony Creek*	R	R	R
Straight Fork*	R	R	R
Little Stony Creek*	R	R	R
Cove Creek*	R	R	R
Stock Creek*	R		
SHENANDOAH COUNTY			
Passage Creek	B,R	B,R	R
Big Stony Creek	B,R,BR	R,BR	R,BR
Cedar Creek	B,R	B,R	R
Mill Creek	B,R	B,R	
Little Stony (above Reservoir)*	B,R	R	R
Paddy Run*	B,R,BR		R
Cedar Creek*	B,R		B,R
Little Passage Creek*	B		R
Peters Mill Creek*	B		R
Tomahawk Pond*	B,R	BR	R
SMYTH COUNTY			
Lick Creek (upper)	B,R	R	R
S. Fork Holston River (gorge)	B,R	R	R
S. Fork Holston River (lower)	B,R	B,R	R
Big Laurel Creek	B,R	B,R	R
Staley's Creek	B,R	B,R	R
Middle Fork Holston River	R	R	R
Comers Creek*	R	R	R
Hurricane Creek*	R	R	R
Houndshell Creek*	R	R	
Dickey's Creek*	R	R	
Center Creek*	R		
Roland Creek*	R	R	
TAZEWELL COUNTY			
Wolf Creek	R,BR	R,BR	R
Cove Creek	B,R	B,R	R
Laurel Creek	B,R	B,R	
Roaring Fork	B,R	B,R	R
Little Tumbling Creek	B,R	B,R	R
Roaring Creek*			R
WARREN COUNTY			
Gooney Run	B,R	B,R	
WASHINGTON COUNTY			
Whitetop Laurel	B,R,BR	R,BR	R,BR
Tennessee Laurel	B,R	B,R	R
Green Cove Creek	B,R	B,R	R
Big Brumley Creek	B,R	B,R	R
Big Tumbling Creek	B,R	B,R	R
Valley Creek	B,R	B,R	R
Straight Branch*	R	R	R
WISE COUNTY			
Middle Fork Powell River	B,R	B,R	R
Burns Creek*	R	R	
Clear Creek*	R	R	
High Knob Lake*	R	R	R
Mountain Fork*	R	R	
Machine Creek*	R		
WYTHE COUNTY			
East Fork Stony Creek	R	R	
Dry Run (E&W Fork)*	R	R	
Gillion Fork Creek*	R	R	
West Fork Reed Creek*	R	R	
Gullion Fork Pond*	R	R	R



Personalities

Edited by F. N. Satterlee

GARY H. SPIERS District Game Biologist

His father was a member of a hunt club in the vicinity of the Roanoke, Virginia suburbs where Gary was born and raised. As he matured, the easy associations he had with the sportsmen in the club and the increasing frequency with which he hunted with them and shared the outdoor experience made a lasting impression on the youth. Lasting also was the impression he got of the people that were his customers on the paper route which he managed. The paper route also taught him to be aware of the world of nature around him and to be observant of the wildlife with which he came in contact.

After graduation from William Fleming High School in Roanoke, Virginia, Gary attended Virginia Polytechnic Institute and State University for two years. This was followed by two years at Roanoke Technical Institute where he was granted an Associate in Applied Science Degree in Electrical Technology.

Soon afterwards, he was employed by the General Electric Company in Waynesboro, Virginia as an Engineering Technician. For two years his assignment consisted of laboratory-testing prototype minature relays. His third year was spent in the engineering office, during which time his uneasiness with indoor work and his desire to be in the outdoors gnawed at him and grew to the point that, "he quit" and returned to VPI to study Forestry and Wildlife.

During the summers, while back in school, Gary worked for the United States Parks Service with an assignment on the Blue Ridge Parkway. This experience, like the days when he had the paper route, taught him about people.

He obtained a Bachelor of Science Degree in Forestry and Wildlife at VPI in 1970 and was granted a Master of Science from the same institution in 1972. In 1971, after having completed all work on his advanced degree except the thesis, which was finished shortly thereafter, he was hired by the Game Commission.

Gary was, and is, assigned as District Game Biologist to the 12 southwestern counties in the Commonwealth. This is an area which has the Cumberland Gap in Lee County at one end and Grayson, Wythe and Bland counties at the other. He is married to the former Joyce Ann Pate of Roanoke, Virginia. The couple have two children and they make their home in Glade Springs, Virginia. To Gary, who gave up a promising career in the electrical industry, "the rewarding thing about this work is the opportunity to associate with such dedicated and professionally oriented co-workers. That on-going experience, coupled with the interesting intermix with the sportsmen and women of the Commonwealth and the opportunity to work outdoors with wildlife, is a continuing source of great satisfaction to me.

The Bowhunter

By John Locke and Gene Wensel

Between the time a kid picks up his first bow and dies an old bowhunter, we find a most unusual kind of guy. They're found in camouflaged shirts and wool pants and all of them have the same idea-- to hunt everyday: to enjoy every minute of every hunt; to protest violently at the slowness of the approaching dawn and give up reluctantly when the sun sets.

Bowhunters are found most anywhere. . on mountain top ridges, in swamps, alder thickets, in sporting goods stores, archery shops, treestands, sneaking out back doors and telling lies at the office to get off work early. He is truth with freezing feet; beauty in camouflage paint; wisdom in a rainstorm and hope with nature as his god.

When you have work to be done, he's thinking of arrows, broadheads, bows, antlers or game trails. When you want him to make a good impression, he may talk of his best hunts, the season to come, taxidermy work or the biggest buck he's ever seen. He has the enthusiasm of a kid at Christmas, as he looks over a ridgetop for sign and when his big chance comes, he has the imagination to explain why the arrow fell off his bowstring.

He likes wool clothes, waterproof boots, dry feathers, razor sharp broadheads, camouflage of all sorts, crisp mornings, frequent holidays, hidden swamps and questionable characters who claim to be better bowhunters than himself. He is not much for dancing, posted land, fluorescent vests, shaving, certain card games, soap operas, weekend company, short seasons, dieting in camp or late sleepers. Without thought of background, position or economic status, he likes people who bowhunt four or more months a year and talk about it the rest of the time.

Nobody else in the world is so early to rise or so tired to get home. Nobody else can get so much enjoyment out of a thermos of hot coffee and cold peanut butter sandwich. No body else suffers so silently with chapped lips. Nobody else can cram into one pocket, two tubes of camouflage paint, a spare bowstring, extra smokes, three candy bars, gum, lifesavers, a container of insect repellent, a map, compass, a squashed sandwich, ball of string, spare wet matches and a busted bottle of deer musk. You can't help but like him. He can stretch a weekend into five days.

And although you may lose patience with him in the fall every year, there's something about the guy that rings as true as a shiny new aluminum arrow. He's an honest and kindly man who asks only of life that the bucks grow big racks, that he gave them a fair sporting chance, and that God will let him come back to the ridges again next year.

(John Locke is in charge of the Charlottesville Police Department's Crime Prevention Bureau and co-author Dr. Gene Wensel is a Chiropractor in Hamilton, Montana.)

Meherri

Southside Virginia does certainly have its share of diamond-in-the-rough rivers of beauty. The Appomattox, Nottoway, Willis and Meherrin are four good examples. On Christmas Eve three very happy Virginians invigorated by the challenge of these streams chose to canoe one of these riverlets — the Meherrin.

Many of you recall the "Huckleberry Finn — Tom Sawyer" adventures Mr. Charlie Wootton and I had canoeing this scenic river for five days in 1974. This time we were joined by Jean Sherbondy, our Mark Twain's "Becky Thatcher" for the trip. The Meherrin was clear as crystal on Christmas and sparkled with virgin beauty as the sunlight's beams reflected back and forth across her rippling waters. The temperature was below freezing when we began our journey at

In The Winter

By Shelton H. Short, III

Whittle's Mill with Hawthorn High Bridge between Kenbridge and South Hill as our destination, but we were not cold — except for perhaps a bit of "cold feet" when we saw this sheets of ice often invading out into the current from both banks.

Landscape along this southside riverlet was constantly changing. High banks and rocky cliffs gave the stream a semi-mountain look.

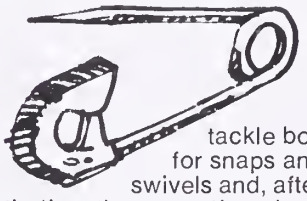
There were rapids clear and beautiful; occasional log jams which caused us to portage twice; swift currents and quiet pools; and snags and rocks. We managed to hit our share of each, but the canoe kept going.

Winter is indeed a vital part of nature's life circle. It may often be our harshest season, but for many humans as well as forest birds and animals, it can be a period of harmony, reflection and repose — A time of preparation for the intense vitality of a new spring yet to come.

TACKLE BOX TIPS

The young fisherman starts with a safety pin as a hook—and if he's wise he never gives it up, just modifies its uses.

No more fumbling through a

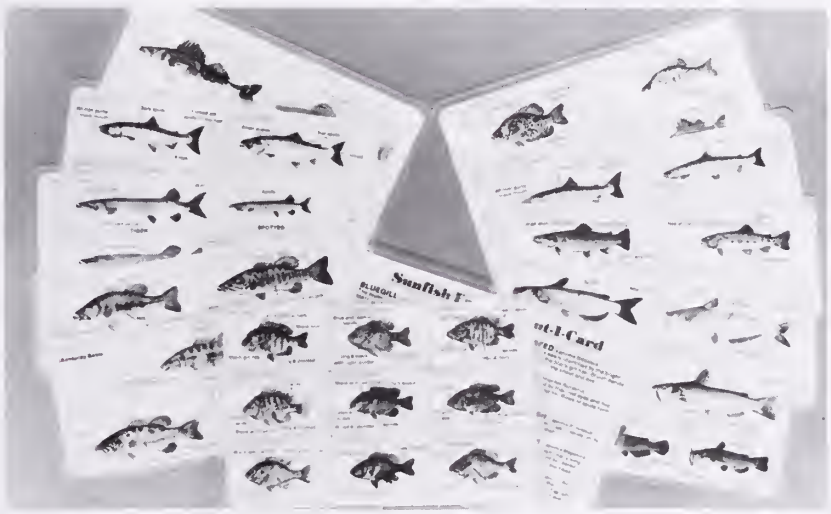


tackle box for snaps and swivels and, after finding them, sorting them away from plug trebels and feathers and plastic worms. Not if the snaps and the swivels are strung on a safety pin, locked and kept free from the rest of the gear.

It's a good, and effective way to store hooks and flies and weights, besides leaving the other compartments of the tackle box free and clear for the equipment for which they were intended.

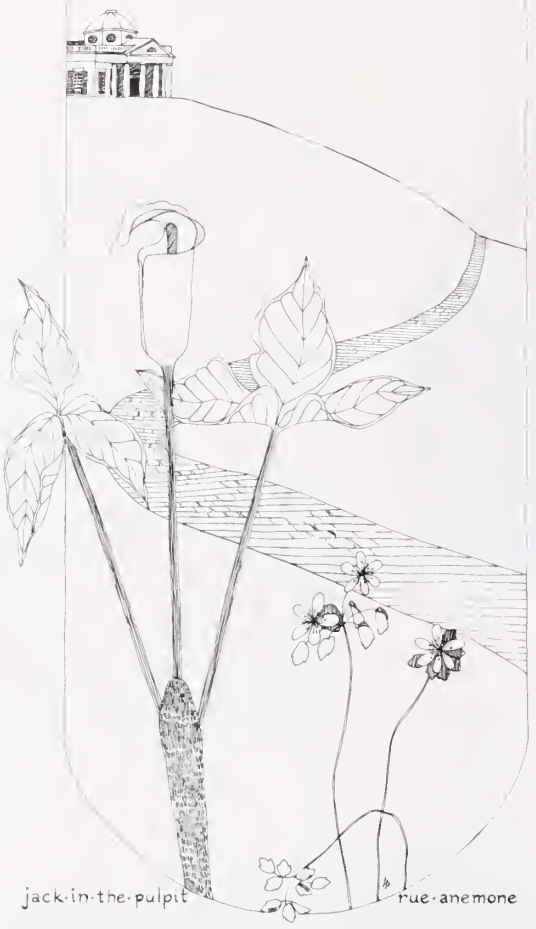
Courtesy UMCO Corp.

Fish Ident-I-Card Now Available



Ever wondered just what that was you just hauled in on your fishing line? Wonder no more, just look at your fish Ident-I-Card. The cards feature all of Virginia's popular game fish and provide descriptions along with full color pictures of each fish. These sturdy plastic cards are available for $1.00 each or a set of seven for $5.00, from the Game Commission, Box 11104, Richmond, Virginia 23230.

Wild Flowers at Monticello



By ELIZABETH MURRAY
and RANDOLPH CRAWFORD

Illustration By Lucia Goodwin

It is March now, on the grounds of Monticello, as well as in the rest of Virginia, and the bloodroot is starting to bloom. Thomas Jefferson saw it too, and wrote in his *Garden Book* on April 6, 1766 ... "Narcissus and Puckoon open" ... and on April 13 ... "Puckoon flowers fallen." Bloodroot, *Sanguinaria canadensis*, a member of the poppy family, is still frequently referred to as red puccoon, and still blooms wild in the woods down by the Rivanna River at Monticello. A couple of pieces of it have been transplanted up near the house where they are doing well. Perhaps the spring of 1766 was rather cool and windless. This would explain why the bloodroot came out so late and stayed so long. Seven days is a long time for the petals to remain on a bloodroot flower. Usually the bloom is very fleeting and lasts only a day or so. Possibly he could have been looking at a succession of different flowers on the same plant, or at a number of different plants in one patch.

In contrast to his volubility about all of the cultivated plants grown on his land, Jefferson was curiously reticent about the wildflowers of his beloved mountain home. However, by seeking out his occasional references to native flora, and by looking at what blooms on the grounds of Monticello today, we can infer what the woods must have looked like as he strolled through them, his mind full of the affairs of the state.

In the early spring the bloodroot would have been plentiful and probably also spring beauty, *Claytonia*, rue anemone, *Anemonella*, bluets, *Houstonia* and *Hepatica*. The grounds are deficient in some species of *Trillium*. There are plenty of wake robins, *Trillium erectum*, but only a few great white trillium, *T. grandiflorum* and no painted or yellow trillium.

There are lots of yellow lady's slippers, *Cypripdeium calceolus*, in the woods and they usually start blooming in April. There are also some moccasin flowers *C. acaule*, and a good many showy orchis, *Orchis spectabilis*. Down by the river there are carpets of trout lilies, *Erythronium americanum*, in early spring, and later on there will be may apple, jack-in-the-pulpit and wild geranium.

All grape hyacinths (*Muscari* spp.) were originally introduced into this continent from Europe, but they naturalized easily and have spread over many a meadow and hillside in Virginia. Jefferson brought grape hyacinths with him from his birthplace at Shadwell and planted them widely at Monticello. They still flourish there in profusion particularly on the banks around the vegetable garden where they are picked for cut flowers for the house in early spring and "mowed off like hay" at the beginning of summer.

Jefferson used a lot of native shrubs in his planting. He mentions a whole list of shrubs and trees "less than 10 feet high" which he planned to use for landscaping in the area between the house and the cemetery.

There are five original trees near the house which were planted in Jefferson's time. Until the bad ice storm of 1975 which took the toll of a fine copper beech, there were six. Today there remain on the west side of the house two tulip poplars which will bloom in late spring and a big European larch with a trunk 18 inches in diameter. On the east side there is an American linden tree and on the southwest side a sugar maple which should start to show some color quite early.

The best way to see the wildflowers of Monticello is to take the circular trail round the base of the mountain. Jefferson, thoughtful as always of the people and

(continued on page 10)

Growing Up Outdoors

Edited by Gail Hackman

WHEN I GROW UP I WANT TO BE A GAME WARDEN

At the status of our environment looms as a problem on the horizon of the future, careers in the management of natural resources have more and more appeal.

Not only are such jobs and responsibilities necessary, they will increase in importance as our non-renewable natural resources shrink.

However, with the increased interest in resource-oriented jobs, the competition for them is becoming keener. This year over 600 applications were considered for 8-12 Game Warden positions. Now that's a lot of competition. But, if you are still interested, here is what is required of an individual before he will be considered as an applicant:

NATURE OF WORK: Game Wardens are required to enforce the game, fish and boat laws in an assigned area of the State. This involves patrol on foot, in automobiles and in motorboats. The warden is responsible for detecting law violations in the pertinent categories, making necessary investigations, apprehending and arresting violators, preparing cases for trial and presenting findings in court. They are responsible for such public relations work as addressing adult and youth groups on conservation topics involving the Commission's wildlife, hunter safety and boating safety programs. On occasion they are required to work with game and fish biologists on management and research projects.

QUALIFICATION STANDARDS:

Age: Applicants must have reached their 21st birthday by the date set for employment.

Vision: 20/40 or better in each eye uncorrected (without glasses).

Education: Must be a graduate of an accredited high school, have a high school equivalency certificate, or be in possession of an equivalent certificate by G.E.D. or U.S.A.F.I.

PHYSICAL CONDITIONS: The applicant is required to complete a medical history report and must have no physical handicap that would impair job performance. The candidate must also pass a physical examination by a physician appointed and paid by the Commission.

CHARACTER: Before the candidates become eligible for actual employment, they shall be subjected to a rigid character investigation by the Commission.

DRIVING ABILITY: Must be able to obtain Virginia motor vehicle operator's license before appointment and have acceptable record of safe driving.

ASSIGNMENT: Must certify willingness to accept duty at any location in Virginia. New Game Wardens should not expect to be assigned to their home county, either temporarily or permanently.

Well, now, if you have successfully qualified in all of the above ways, and are still interested in becoming a game warden, here is the procedure necessary to submitting a formal application.

You must contact an office of the Virginia Employment Commission. Applications are accepted from July 1 through October 1 each year. You will be required to complete an application with supplement, and (on forms provided by the V.E.C.), a criminal conviction history, and a medical history report. You must take with you to the V.E.C. office, a copy of your high school diploma (or equivalent), and a copy of your birth certificate so that verifications may be completed by V.E.C. personnel. The V.E.C. will then forward the application, supplement, conviction record form, medical history form and verification of high school graduation and date of birth to the State Division of Personnel.

You will be advised concerning scheduling of open competitive testing. The written examination will cover such areas as ability, aptitude, wildlife background knowledge and personal adjustment. If you successfully pass the written test, and if your personal history records are accepted, you will be invited to appear in Roanoke or Richmond before an oral examination board.

PRE-SERVICE TRAINING: If you are fortunate enough to earn one of the higher examination scores, you will be required to attend a training school. This school is another basic requirement for employment and may be considered an extension of the examination. If you are called, you will be required to reside at the training center for the duration of the school. Room and board will be furnished by the Commission and you will be placed on an hourly wage equal to the starting salary.

APPOINTMENT: If you successfully complete the training school, you will be placed on regular game warden probationary status. The first year of employment constitutes the probationary period. After satisfactorily serving at least one year on the probationary status, you will be promoted to Game Warden.

On The Waterfront

Edited by Jim Kerrick

BOATING GIVES A GOOD GLIMPSE OF THE WILD SIDE OF MARINE LIFE

The pleasures of boating involve not only sun and water, but the presence of wildlife species as well.

One of the great joys of going boating is that because you are getting away from crowds and civilization, you will often encounter animals which you almost never see except while out on the water.

This, of course, has a practical application if you are a fisherman. After all, it's a type of marine animal which you are looking for. You are seeking fish, whether it be the dimple of a rising trout in a mountain lake, or the purple and black dorsal fin of a billfish out on the Gulf Stream. You'll watch the birds, too, if you are a fisherman. A swarm of wheeling, diving gulls usually means a school of baitfish on the surface. And when bait is on the surface, there are probably game fish underneath.

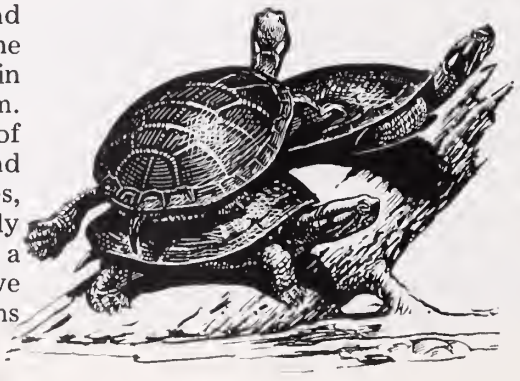
Even if you are just out for a ride, or at anchor in some secluded lagoon, you will often notice animals and wildlife which you would never see otherwise, but remember, when you are out in nature, and you encounter wildlife, you are the intruder.

For instance, you will see many and various birds that live on or near the water. Often you will see them on the water. Having had to deal with people before, most birds will be airborne and away long before you can approach them. But sometimes they won't, or can't. Sometimes they are tired after a long flight, sometimes they are hurt, sometimes they will be confused and swim in circles. Leave them alone and don't chase them. Sit back in your boat and enjoy watching them. You can get quite a kick out of watching a gull become graceful and streamlined as it skims the waves, dipping into the troughs and barely clearing the crests. Or watch a cormorant suddenly up-end and dive below the surface for what seems like hours while you try to guess where it will resurface. Then, when it finally does emerge with a silvery fish crosswise in its beak, watch it flip its dinner up in the air and catch it head downwards as it cranes its neck up to the sky, struggling to swallow.

Birds of all sorts are naturally drawn to the water. You can sometimes see bald eagles wheeling high overhead. You'd better look quickly, though. Our wonderful pesticides are killing all kinds of birds faster than they can reproduce.

Birds and fish won't be the only animals you may find. If you go boating in the mountains, your chances of seeing deer and bear are very good, especially if you are out on the lake with the rising sun. You probably won't see deer at the water's edge near to civilization during the day because they usually lie-up in the thickets and sneak down to the water at night.

It's not always the larger animals that you can count on seeing. If you are relatively quiet and watchful, you'll see all sorts of smaller ones in and around the water.



Frogs, turtles, salamanders and snakes will all venture forth in the daytime, and will give you much enjoyment watching them. Even something as mundane as a dragonfly or a warer skater is interesting to watch.

If you live near the sea where the water is clear, the next time you are out in a boat in shallow water, cut the engine, go forward, stretch out and hang your head over the bow. As you drift slowly over the bottom, you'll discover a whole new world. Sand patches will appear light green, rocks are dark brown, purple or dark blue; grass patches will be brown, and living coral heads will be light yellow or orange.

You'll see crabs skuttling sideways across the sand, claws upstretched and open as your keel passes over the lacy sea fans and lazy graceful sea anemones tucked in the crevices of a rock. The sand itself will have a thousand geometric ridges and ripples, shifting constantly as it buries and unburies rocks. Or, you may see great clouds of silvery fry, turning and darting in unison.

These are just a few of the marine creatures you are likely to come to know while out boating. It's a fascinating world to be a part of, and somehow, just being exposed to it and aware of it, even for only a short time, will give you a greater appreciation of the rest of life. It may seem slightly naive to say that if you gaze on beauty everything becomes beautiful. But, believe it or not, it seems to work.

Bird of the Month

Tufted Titmouse

By J. W. TAYLOR

Too few among us appreciate the titmouse. Even we who know the bird well tend to take its virtues for granted. It deserves a higher rank in the esteem of those who take pleasure in feeding and attracting birds, or just watching them.

Friendly, but not pushy; well-dressed, yet not flashy; sweet voiced but not loud or persistent, the titmouse emits nothing but positive "vibes." And it does not forsake us at the onset of cold weather, but remains to cheer us through the winter.

The worst of storms cannot stay it from its rounds. Black eye sparkling, crest raised alertly, it comes readily to the backyard feeder, where it partakes of suet and sunflower seed. Clad in the softest of blues and grays, with a tinge of cinnamon on the flanks, it adds a pleasing touch of color to the sombre landscape.

When finally the winter begins to break, or even on warm days in February, the titmouse begins its mellow whistling. A bit rusty at first, it soon attains full voice, and then we hear the clear "*peto, peto, peto*" and ourselves sense the new life of spring.

For the titmouse, this is a call that signals rebirth. It is the song of courtship, the voice of fresh stirrings within, which will continue through the mating and nesting period. That finished, there is a season of quiet.

Not complete silence by any means, for the titmouse has a variety of other notes in its repertoire. Most of them are delivered with a decided chickadee-like accent, but with enough difference to make them distinctive. They are more nasal, more slurred together than are the calls of its smaller relative.

For the titmouse is first cousin to the chickadee. Both species belong to the family *Paridae*, a group containing about 43 species, widely distributed throughout Europe and North America, with a few representatives in Asia and Africa.

The usage "titmouse" was long prevalent in England, before being applied to the American species. There it was applied to a variety of small birds, the term having derived from Scandinavian origins, and meaning "any small creature."

As noted previously, our titmouse is non-migratory. It is doubtful if, under most circumstances, they'll ever travel more than a few miles from their birthplace. Noticeable, however, during recent years, has been a gradual range extension to the north-pioneers moving into parts of New England and the midwest.

In Virginia they are regularly seen statewide, except in the highest reaches of the Alleghenies. The highest population densities are found on the coastal plain, the lowest, west of the Blue Ridge.

WE ALL NEED CLEAN WATER

NATIONAL WILDLIFE WEEK • MARCH 20-26 197

JOIN AND SUPPORT THE NATIONAL WILDLIFE FEDERATION AND STATE AFFILIATES